Somatic Education and Piano Performance

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Abstract

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Research in the area of piano performance supports the concept of pianists engaging in problem-free piano methods. Existing pedagogical methods examine piano performance from a localised perspective, specialising in instruction of the detailed movements of the fingers, hands and arms. The present research aims to look at piano performance through a holistic lens. This is done by means of three theoretical and practical axes of somatic education: The Pilates Method, Yoga and the Alexander Technique. The main purpose of this study is to determine whether the three methods of somatic education can be conducive to piano performance. Secondary purposes are to determine whether the nature of educational delivery applied is appropriate in the exposure of pianists to somatic education, the stage of piano education at which pianists' exposure to somatic education is most beneficial and the components of piano performance that can be enhanced from somatic education.

Bibliographic review of relative literature reveals that, although there is amplitude of information on the application of some somatic methods to piano performance, there does not exist a comprehensive and structured educational system which incorporates principles of somatic education in piano performance.

Ten workshops in Somatics for Pianists© were conducted in music conservatoires of Northern Greece in the span of three years. As a result, 385 valid questionnaires were produced by participating pianists of all levels, aged 15 and above, and with varying capacities as pianists (soloists, students, teachers etc). The questionnaires focused on issues of piano playing, methods of somatic education, workshop delivery and implementation of somatic education to piano performance.

Six email interviews were conducted in order to triangulate results relating to the effectiveness of somatic education on piano performance and the related practical applications. These interviews were given by pianists/piano teachers who are also qualified instructors in one of the three somatic methods examined in this thesis.

Analysis of data from the questionnaires and the interviews yielded results that support expansion of knowledge in piano curricula from the purely pianistic issues to more general issues of movement as taught and related in methods of somatic education.

The conclusion of this study is that somatic education has a positive impact on most components of piano performance and recommendations were put forward for future research in the creation of pedagogical manuals that will include systematic and structured modules of somatic education.

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Glossary

This glossary is created in order to provide the reader with my personal definitions of terms as used in the present thesis.

Somatics: Somatics is the wider field which promotes the unity of mind and body and encompasses methods and modalities that are both therapeutic and educational with the purpose of healing long-term psychophysical disorders by enhancing the subjective experience and developing self-awareness.

Somatic Education/somatic education: Somatic Education is a subfield of Somatics and is defined within this research as the field of educational disciplines and mind-body modalities that consider the self holistically and as experienced from within. The term is also encountered in lower case as 'somatic education' where it will mainly refer to the educational process which, for the purposes of this project, is differentiated from other kinds of direct instruction (e.g. traditional instrumental teaching or classical ballet coaching) which are based on the paradigm of demonstration and imitation. There are also instances where the two are used interchangeably as the term in its lower case form, 'somatic education', also inevitably encompasses the meaning of the wider field of Somatic Education and vice versa.

Piano performance: Piano performance is defined for the purposes of this thesis as the activity that encompasses the areas of learning, practicing, interpreting and teaching the piano.

Piano interpretation: For the purposes of the present research, piano interpretation is considered as the art of understanding, analysing and delivering a musical composition taking into consideration stylistic, aesthetic and compositional characteristics of the composition that will enhance the artistic experience of the interpreter and the audience, always aiming for an authentic and faithful representation of the composer's intentions and the interpreter's idiosyncrasies.

Piano education: The long term progressive and comprehensive process in which piano students receive regular lessons in all aspects of piano performance as well as non-pianistic musical skills through individual or class tuition.

Piano pedagogy: The field of study which focuses on the methods and techniques of teaching the piano. For the purposes of the present thesis, piano pedagogy has also been used to describe both the process of training piano teachers and piano students under the premise that, throughout their piano studies, piano students may also learn through exposure to many different pedagogical systems.

Piano practice: The process through which a pianist masters a musical composition at the level of presenting it as a complete work of art. This process involves reading, analysing and finally memorising music as well as organising and applying practice routines that will materialise the pianist's technical and interpretative intensions.

Piano technique: The intricate skill through which a pianist coordinates the movements of the fingers, hands, arms and the whole body needed for the performance of a musical composition at the piano.

Preface

I came to this research through my experience of suffering a severe piano-related musculoskeletal injury in preparation for my MMus recital at the Royal College of Music in 1998. My initial quest was focused on finding a cure. The path of traditional medicine led me to care for and focus on the specificities of the problems in my fingers, hands and arms. In other words, the medical specialists' main preoccupation was to direct me towards symptomatology and not to search for the causal factors. This first step partially and temporarily diminished the symptoms of the injury. However, my engagement in piano performance would immediately trigger the old musculoskeletal symptoms.

I found more relief from these symptoms with the holistic diagnoses and treatments of alternative and complementary doctors who interpreted my problems by looking for the initial cause and by viewing me, and encouraging me to view myself, as a whole person (somatic approach). This experience made me look into the causes and question whether my piano-related musculoskeletal injury was purely a result of how I play the piano or a result of how I move and how I experience movement as a whole person (as a soma).

The journey of recovery and discovery was twofold: It involved a complete re-education at the piano and a complete re-education of the way I consider movement in general. This was a parallel process and it started with treatment and rehabilitation, continued through to identification of causations and concluded with re-education.

The re-education at the piano involved research into the traditional paths of piano pedagogy, detection of possible unconstructive and unhealthy pianistic habits and exposure to numerous rehabilitative approaches to piano playing and my special thanks go to Valeria Szervanszki, one of the important students of the late Hans Leygraf in the UK and Edna Golandsky, founder of the Golandsky Institute and leading exponent of the Taubman approach.

One of the problems of embarking on research of this nature was my limited knowledge of aspects of the study of movement according to mind-body modalities

that would contribute both to my general well-being as well as piano performance. I, therefore, pursued a movement rehabilitation program with Pilates instructor Alan Herdman (Selby & Herdman, 1999) and Rolfing Practitioner Jenny Crewdson and completed my training as a Pilates instructor with Lionel Brannigan and most notably with Jean Whittaker. I later completed a two-year training course in Yoga Therapy under instructor Jirna Kallidi, who specialises in the treatment of musculoskeletal disorders through the use of the yogic principles of B.K.S. Iyengar (Iyengar, 2008). However, it was not until I embarked on a four-year teacher training course in the Interactive Teaching Method of the Alexander Technique (ITM) that I was able to comprehend the connection between thought and movement and my thanks go to the founder and Head of Training, Dr Donald L. Weed (Weed, 2004, 2012). The ITM training course covers aspects of study and experiential work unprecedented in the world of the Alexander Technique but also in the realms of somatic education and performance pedagogy.

Through this parallel education, I realised that there does not exist a structured, graded and accepted system that exposes pianists to principles of piano playing through the simultaneous exposure to principles of mind-body modalities, or so-called somatic education methods. I therefore embarked on parallel research into methods of somatic education and piano methods that are informed by the function and structure of natural movement in order to examine the applicability of somatic principles in piano performance and the possibility of a synthesised approach.

Interestingly, although my approach to cure, rehabilitation and re-education was initiated due to specific issues stemming from piano-related musculoskeletal disorders, my education and training in three somatic methods taught me that the quickest way to manage specific issues is through a general re-education. This process is true of the way movement is experienced in the whole body as well as intricate, targeted and detailed movements that comprise piano performance. Every stage of this thesis will, therefore, examine the subject of somatic education and its applicability to piano performance first from a general scope, in order to then proceed to the specific issues that emerge within the practice, teaching and interpretation at the piano.

Introduction

Aims of the thesis

My main aim in this thesis is to investigate the value of applying principles of Yoga, the Pilates Method and the Alexander Technique to piano performance in a structured and systematic manner. Of the plethora of existing approaches to modern piano performance, some have evolved under the influence and guidance of somatic methods such as the Alexander Technique, Tai Chi, the Feldenkrais Method or Yoga (Lister-Sink, 2005; Fink, 1999; Fraser, 2006; GéNIA, 2009), a significant number have evolved from traditional mainstream methods of movement analysis (Taubman, 1995; Ortmann, [1929] 1962) and a great majority were developed as a result of continuing a long standing tradition of piano schools or applying results of self-observation and experimentation (Breithaupt, 1909; Matthay, 1903; Whiteside, 1957). One problem is that the methodologies do not engage with questions of problem-free piano performance in a holistic manner. This project sets out to consider these questions holistically.

Background

Whereas in the case of music education, the areas of cognition and perception have contributed substantially to the progress and establishment of comprehensive teaching principles and techniques (Odam & Bannan, 2005), instrumental instruction and piano instruction in particular has placed emphasis on health and physical awareness only in the last three decades of the 20th century. Even today, there remains a strong tradition of teaching according to unquestioned practices of interpretative and performing techniques passed on from generation to generation of musicians (Golandsky in Taubman DVDs, 2003). The pursuit of single-minded technical and so-called pragmatic outcomes has arguably led to a high incidence of injury among performers, myself being one of its victims.

Performing Arts Medicine and the approaches of modern piano pedagogy

In traditional instrumental teaching, discussion of muscle movement has often been isolated from broader musical considerations; what is more, it has focused on categorisation of piano technique on the basis of textural demands (e.g. exercises for finger independence, chords, trills, octaves) and in isolation from music and somatic considerations (Cortot, 1959 [1928]; Hanon, 1986 [1873]; Philipp, 1908). Contemporary piano methods, widely adopted by 20th century and contemporary teachers and pedagogues, seek problem-free music making (Taubman, 1995; Lister-Sink, 2005). At the same time, research into injury preventative instructional techniques is gradually being introduced into university and conservatoire curricula, the relatively recent discipline of Performing Arts Medicine (PAM) becoming established in some music departments. PAMA (Performing Arts Medicine Association) and BAPAM (British Association for Performing Arts Medicine) embrace a multiplicity of approaches, conventional, complementary and alternative (PAM, 2012). The heterogeneous nature of this new literature suggests that we are in a transition period in piano instruction (and indeed in all instrumental and vocal instruction) and that much yet needs to be done in integrating or even testing methods.

The assumption that traditional piano teaching can, and most often does, present pianistic problems which stem from the absence of holistic teaching and physiologically erroneous instruction is made after my personal exposure to teaching of variable schooling as well as from reports by eminent professors of piano who act as examiners in countries where the educational systems are based on strict selective processes. In the former case, I have received piano instruction by teachers whose teaching principles were reported to be stemming from the long pianistic traditions of Russian and French conservatoires and German musikhochschule. The teaching principles of these pedagogues, although promoted as representative of national piano traditions that are barely identifiable nowadays, showed some common characteristics: a) dogmatic adherence to technical traits (such as low wrists, ulnar deviations, highly raised fingers, curved fingers, flat fingers, arm weight baring on the fingers etc.); b) ignoring the physical repercussions of these technical traits such as fatigue, pain or permanent injury; c) absence of ergonomic applications (such as consideration of the analogy of the piano stool to the musculoskeletal proportions of

each individual pianist); d) dismissal of students who could not achieve the requested technical traits as lacking ability or/and talent; e) placing the end result of interpretation and sound production as the highest priority which is to be reached at the expense of, or regardless of, the student's health and well-being or their lack of expertise in the prerequisite skills. In the latter case of teachers who have reported on the strict selective processes of certain educational systems in Russian and Japanese conservatoires, I have made some observations which I have also had the opportunity to cross-reference with graduates of those music institutions. The selection criteria for a piano student upon entering pre-conservatoire and conservatoire study cycles in Japan and Russia are extremely high. This pre-requires students to have survived an early youth (ages 3 to 13) of exhausting practice schedules of up to 8 hours and very rarely less than 6 hours per day. This practice schedule is only to be "enhanced" by more hours of practice in pre-conservatoire and conservatoire study, where competition is even higher and at a higher level of pianistic competence. Even in a hypothetical circumstance of somatically informed and holistic musical and pianistic culture, the overuse of the whole body as well as that of specific mechanisms needed in piano playing, would inevitably bring about symptoms such as fatigue, pain and injuries, symptoms which have been exposed extensively by performing arts medicine (PAM) and its international branches as main repercussions of overuse. Therefore, the average pianist involved in the educational system of the two countries mentioned above, who will not be likely to receive any kind of somatic education, will not survive this Spartan educational process. The few piano students who do survive are considered by their teachers as gifted, hard-working and adhering to the principles of the pianistic traditions taught. These will be the piano students who will later be presented as exemplary representatives of their piano tradition as proof of the value of the pianistic principles of the respective tradition without, naturally, taking into consideration the natural selection that has preceded and the exhaustive system which the piano students survived, the idiosyncrasies of which may go by unnoticed and concealed. Thus, traditional piano teaching schoolings were developed throughout the twentieth century which have led to the high incidents of piano-related musculoskeletal disorders (PMRDs) as can be seen in the relevant bibliography and the reports by performing arts medicine (PAM).

By drawing on current research, PAM differentiates musculoskeletal problems in musicians from musicians' medical problems of a neurological or pathological nature. Consequently, as far as musicians' musculoskeletal problems are concerned, there emerges a categorisation of education and treatment into scientific fields that stem from medical disciplines such as Biomechanics (Hamill & Knutzen, 2007), Ergonomics (Bridger, 2003) and Physiotherapy (Prentice & Voight, 1997); and 'somatic' approaches such as the Alexander Technique (Alexander, 1997 [1918, 1923, 1932, 1941]), Yoga (Lasater, 2003) and the Pilates Method (Pilates & Miller, 1998b [1945]). The former tend to deal with treatment and rehabilitation of specific musculoskeletal problems in musicians and have minimally incorporated knowledge of instrumental kinesiology into their treatment regimes, while, the latter deal with human movement more holistically, thus incorporating medical, kinaesthetic and psychosomatic information into their application (Hanna, 1988).

Somatic Education is the field of educational disciplines and modalities that consider the self holistically and as experienced from within, namely, as "soma" (Hanna, 1988, p.20). The phrase Somatic Education was used by Thomas Hanna (1928-1990) as a means of expressing his philosophical and practical discoveries in the unity of the human self. Hanna (1988, p.20) maintains that:

> What physiologists see from their externalized, third-person view is always a "body". What the individual sees from his or her internalized, first-person view is always "soma". Soma is a Greek word that, from Hesiod onward, has meant "living body".

Today, Somatic Education is developing exponentially and, although Hanna established the term, modalities that taught through the principles of Somatic Education existed before Hanna Somatic Education. Somatic modalities also developed chronologically in parallel to the development of Hanna's own philosophical approach and continue to develop into the 21st century. Nowadays, the so-called mind-body awareness techniques adjust primarily to the educational needs of performing artists and secondarily to the needs of people in search of a "synergetic whole" (Hanna, 1993). As predicted by Hanna himself (Hanna 1993, p.188):

> Somatic education is not only something new and unexpected, it is something of momentous consequence: It entails a basic transformation in our understanding of the human species and of the capacities of the human individual.

Piano performance in all its facets, namely, practice, interpretation and teaching, has seen an equally exponential development throughout the history of keyboard music in general and piano music in particular. Archetypal treatises written at the age of the harpsichord, which had an influence far into the age of the piano, such as Couperin's *L'art de toucher le clavecin* (1716) consider the keyboard player as a whole only sporadically. During the 19th and early 20th centuries, the increasingly frequent publication of scholarly and pedagogical texts written by exponents of distinct piano schools tended to focus on specific aspects of piano technique, the microanalysis of which has been considered increasingly advantageous (Stanier, 1973; Kochevitsky, 1967). However, interest and scholarly research in holistic approaches to piano performance has arisen largely in the last three decades primarily due to the increasing reports of injuries caused by piano practice and secondarily due to the reconsideration of the pianist as a synergetic whole (Wristen, 1998). Global accessibility to new information through the ubiquitous use of the internet and its related interactive media has resulted in a rise in popularity and antagonism in piano performance. As a result, investigation into the effects of mind-body awareness techniques and their contribution to piano performance has gained ground in academic research (Williamon & Thompson, 2006). Proof of the exponential pace in the development of mind-body practices that aim to facilitate performance is the fact that in the course of this research project alone there have emerged substantial contributions, changes and creations of methods in the area of healthy instrumental practices and piano practice in particular (e.g. GéNIA, 2009; Lanzer, 2009; Olson, 2009; Leska, 2010).

Limitations

My personal exposure to problem-free piano methods and somatic methods came as a result of a performance-related musculoskeletal injury. After having resolved my personal pianistic and physical issues I proceeded to receive specialised education in both fields, realising the limitations in the area:

- Lack of a synthesised and systematic approach that will educate pianistically as well as holistically
- Lack of critique of existing approaches
- Lack of ubiquitous conformity to health and wellbeing requirements of professional bodies
- The existing methods in both fields of somatic education and piano performance are not yet globally accepted as part of music curricula
- Each somatic method contributes idiosyncratically to learners as does each piano method
- The majority of piano instruction in the western system is not in full synchronisation with the academic advances in the field of performing arts medicine

Research questions

In an attempt to approach problem-free piano performance in a holistic manner I introduce the present thesis with a reflective account of my personal investigations as they occurred in chronological order. Following this journey of investigations, my engagement in academic research revealed the following questions:

- What is already known in the literature of somatic education regarding problems of performing artists and pianists in particular?
- What is already known in the literature of piano performance regarding a holistic consideration of pianists?
- To what extent are pianists exposed to somatic education?
- What kind of educational delivery is most appropriate for exposure of pianists to somatic education?
- At which level of their education are pianists more open to receiving and accepting somatic information?
- Which components of piano performance can benefit from somatic education? (e.g. general components such as practice, teaching, interpretation and specific components such as memorisation, stage fright, technique, etc.)

I have approached the problem of applying principles of somatic education in piano performance from three perspectives: The Pilates Method, Yoga and the Alexander Technique. Each of these somatic modalities has contributed substantially to the improvement in musculoskeletal conditions in general (Irez, 2009; Herdman 2007; Lasater, 1995; Brennan, 2011) through specialised movement regimes with trained practitioners. Having conducted a series of experiential workshops on Somatics for Musicians© for seven consecutive years, I organised my pedagogical material into information adjusted to the purposes of the present research and the needs of pianists in a series of experiential workshops titled Somatics for Pianists© over the span of three years. The theoretical, practical and experiential components introduced pianists to the Alexander Technique, Yoga and the Pilates Method and exposed them to practical applications of these principles to piano playing. Out of ten experiential workshops 385 valid questionnaires were produced, which cover a wider area of pianistic issues as well as focused areas of somatic issues in piano performance. These workshops were conducted in music conservatoire environments and were addressed to a sample of music school students, conservatoire students, university music department students, soloists, accompanists and piano teachers. The pedagogical delivery was based on a synthesis of models of the Interactive Teaching Method (ITM) as created and designed by Dr. Donald L. Weed, Body Mapping as created and designed by William and Barbara Connable and, finally, adult education as developed by Rogers (1998), Mezirow (2007) and Courau (2000). In order to enhance the results that were produced from the questionnaires I conducted six semi-structured interviews with professors of piano who teach through their experience and expertise in methods of somatic education.

Summary of thesis

In Chapter 1, I give a thorough account of my own research journey in chronological order of events of my piano-related injury, treatments, re-education, training and, finally, research and practical applications. This chapter acts as an introductory research tool which has equipped me with the knowledge and skills required in this study. It also aids the reader to understand the logical processes followed from the literature review to the distribution of questionnaires and interview questions.

Chapter 2 then defines the field of Somatics and three methods of Somatic Education utilised in this thesis as the main theoretical axes: the Pilates Method, Yoga and the Alexander Technique. These methods are examined contextually and conceptually. An examination of the existing literature on each of the proposed somatic methods is followed by a closer look at what makes each of these methods somatic. Each section culminates in an examination of the application of each somatic method to performing arts and, where applicable, to piano performance. The views of somatic teachers and scholars on piano performance are then seen through a purely somatic lens.

In Chapter 3 the area of Piano Performance is examined from a perspective of somatic considerations throughout the history of piano instruction, practice and interpretation. Modern methods of piano instruction are then presented and examined as to their utilisation of principles of methods of somatic education.

Chapter 4 outlines the methodology theories which laid the foundation for the present research as well as the suitability of these theories to the research. This chapter also presents a discussion of the population and sample, the research tools and the processes followed for the design of these tools. It illustrates the design and content of experiential workshops and the semi-structured interviews.

In Chapter 5 the data collected from 10 workshops on Somatics for Pianists© is analysed. Recorded semi-structured interviews are also analysed qualitatively. These two tools provide a solid triangulation of the hypothesis made at the beginning of the research as well as a confirmation of the facts discovered in the record of my personal investigations and the literature review.

Finally, in Chapter 6, conclusions are drawn from the investigations conducted in the previous chapters. A discussion of the results presents the benefits and the value of incorporating Somatic Education into piano curricula. Further research is proposed in the cases of constructive findings and as a resolution to the limitations that have occurred during the study in anticipation of the next stages in the new field of Somatic Education and Piano Performance.

Chapter 1

Chronological journey of personal investigations

This chapter is a reflective account of the processes I went through from my original, debilitating injury to its successful resolution. It covers a period prior to the methodological rigour that led this journey to a formal academic study. The reason for using this chapter as a starting point is that it will be helpful for the reader to know in more detail the researcher's journey, upon which the theoretical and methodological material that follows in the next chapters is based. It is also hoped that this account will help raise awareness of the logical sequence of the research questions as they arose in chronological order and in order of the knowledge and skills acquired. Thus, the intention of this chapter is to highlight the physical and conceptual impasses I encountered, as well as to describe the methods of diagnosis, treatments, re-education, research and training that I adopted and applied before structuring the workshops on Somatics for Pianists©. These workshops have served as the main research tool on which this thesis is based.

At this point, I must stress that I have intentionally used phraseology found in Alexander's chapter *Evolution of a Technique* (Alexander, 1997 [1932], pp.409-429), without attempting to insinuate that I have discovered a process as significant and as useful to learners as the one that F. M. Alexander discovered. This is done in order to emphasise the fact that I have identified with the feelings of deep frustration and the need for perseverance shown in Alexander's account. I have also used this terminology out of gratitude, because the fortunate ending of this investigation culminates with my exposure to and employment of Alexander's work, which strengthened my appreciation of its unlimited applications.

In retrospect, I realise the implications that this thesis will have as an informative text for other musicians and the validity that it offers as a research tool. Although in commencing the present study I was not initially pursuing a research agenda of this kind, in order to follow the processes described in the present chapter, it was necessary to acquire new knowledge and skills before reporting and reflecting upon these processes and later draw on fresh knowledge that emerged as a result. In effect,

I have been following an action-research programme that has provided me with the insights that have informed the present project.

I believe that it is important to provide a visual facilitation of the way the events that led to the present research project unfolded one after the other as well as in parallel to each other. I have thus created a chronological chart of my investigations, which, I must mention here, consists of six stages. This chart may be found in Appendix A.

1.1 Initial injury; conventional and alternative treatments

The first stage of my investigations started with my personal experience of a piano-related musculoskeletal injury, which occurred while preparing for the final recital for the acquisition of the MMus degree in advanced piano performance at the Royal College of Music in October 1998.
The physical symptoms were:

- a general sense of fatigue
- inability to move with ease
- inability to move my arms for gross movement
- pain in the shoulder girdle
- pain in the neck muscles
- severe pain in the forearms
- severe pain in the hands and fingers, especially thumbs and index fingers

The above physical symptoms also triggered a series of psychological symptoms that included:

- heightened stress from the pressure caused by the potential repercussions of my physical symptoms on the completion of my degree
- inability to concentrate on one task
- inability to rationalise my thinking in a constructive manner for facing the problem and organising and materialising the plan needed to solve it
- sense of failure which encouraged pessimistic planning or no planning at all
- fear of the stigma of artistic and professional inadequacy

- fear of the crucial years of a student career and financial and emotional investment being wasted

1.1.1 Conventional treatments

Due to the fact that at the time of my injury (1998) there was limited support from the internet for such complaints, the search for piano-related problems yielded relatively few entries on the internet. Therefore, I felt that the only option was to follow advice from the immediate teaching and family environment and, consequently, sought medical diagnosis. As a result, I pursued a long term quest (twelve months) in covering every conventional medical specialisation which was directly or –eventually– indirectly related to my problem. As I was travelling and living between three different countries at the time (UK, France and Greece), I sought medical diagnosis from a variety of specialised medical doctors shown below:

- 1 orthopaedic hand specialist
- 2 orthopaedic MDs specialising in sports therapy
- 5 orthopaedic surgeons
- 1 rheumatologist
- 3 neurologists
- 2 pathologists
- 1 psychiatrist

In retrospect, and only by viewing this search through the lens of my personal education and training in movement modalities, I realised that the process that I was following was from the specific to the general, in other words, starting from the specialisation most linked to piano-related musculoskeletal injuries and concluding with the wider area of pathology for possible general pathological defects which may have been determinative to my condition.

In all the cases of the experts that examined me (except for two of the neurologists), the medical doctors practised only clinical diagnosis. In all the cases, the medical doctors addressed the problem at hand as caused by long hours of practice. In other words, the diagnosis rested on the concept of the limited ability of the muscles and

tendons to perform their tasks in the long term due to inflammation that was caused by long term use, which resulted in fatigue and its accompanying pathological effects.

To illustrate the problems I encountered in dealing with conventional health practitioners, I briefly list the diverse diagnoses and proposed treatments offered to me at that time. More specifically, the orthopaedic hand specialist could detect by touch that my hands, arms and neck showed signs of swollen muscles and diagnosed inflammation caused by repetitive strain injury (RSI); the suggested therapy was rest for at least two weeks and abstaining from piano practice or any specialised and dexterous movements of the fingers and hands. The two orthopaedic MDs specialising in sports therapy followed the same diagnostic tools and prescribed rest for two to three weeks plus ten physiotherapy sessions (alternating cold/hot application on my arms, electrotherapy and ultrasonic treatment). Three orthopaedic surgeons diagnosed local inflammation in the hands and arms, did not address the problems in the shoulders and neck and prescribed anti-inflammatory medication orally and locally for a period of three weeks and then as needed with every recurring episode. The first orthopaedic surgeon diagnosed local inflammation in the hands and forearms, did not address the problems in the shoulders and neck and prescribed cortisone-based anti-inflammatory medication; he also performed local cortisone injection once. The second orthopaedic surgeon diagnosed severe tendonitis and suggested surgery for the restoration of inadequate function of the tendons of the thumb and index fingers in both hands. The rheumatologist examined by touch and diagnosed severe tendonitis caused by hypermobility syndrome; his prescription was intense rehabilitation (in particular, a programme based solely on muscle strengthening) for the stabilisation of finger joints in order to inhibit hypermobility at those joints, which, according to his diagnosis, was the cause of recurring and consecutive injuries. One neurologist diagnosed by touch and cross-referenced with my personal descriptions of symptoms and prescribed a combination of myorelaxant and anti-inflammatory medication. Two neurologists tested through electromyography (EMG) tests and found nerve activity of muscles at rest and during contraction to be within normal range; they also ran a magnetic resonance imaging (MRI) scan, which did not show any significant findings; both neurologists prescribed rest for as long as needed for the symptoms to cease. One pathologist diagnosed general fatigue caused by stress and prescribed bromazepan (medication with

anxiolytic, sedative, hypnotic and skeletal-muscle relaxant properties). One pathologist diagnosed repetitive strain injury (RSI) and referred me to an orthopaedic doctor. One psychiatrist attributed my symptoms to a combination of stressful physical and psychological conditions excluding, however, the possibility of my general psychological state of the time having a direct and negative influence on my specific symptoms and prescribed mild myorelaxant and anxiolytic medication.

I followed all of the above treatments except for the surgery proposed by one of the orthopaedic surgeons, to which the three remaining orthopaedic surgeons were vehemently opposed. During a period of twelve months of combining local physiotherapy and intake of anti-inflammatory medication there was a minor amelioration of symptoms at rest. However, these symptoms recurred once I attempted to move for simple movements and were severely aggravated in any attempt to practise the piano. This cycle of attempting to practise and experiencing the initial symptoms was repeated every two to three weeks and, according to the instruction of the respective physiotherapist, during the first twelve months of my attempt to recover with no amelioration of the initial situation. In addition to the above, although I found no signs of other pathological factors that could have contributed to my initial symptoms, I went through a last procedure of general health tests in order to exclude any possibility that might have escaped me in the process of looking for specific symptoms. Those tests included the following: full neurological clinical examination, general blood test, electrocardiogram (ECG) test and Holter monitor heart test. There were no significant findings that could be related to my injury.

1.1.2 Transition from conventional to alternative medicine

One neurologist, whom I have not yet mentioned, adopted a somewhat more holistic approach. His diagnosis was based on a combination of clinical and medical tools. He deduced that all the problems were arising due to a syndrome of forced neck alignment. His view was validated with an x-ray which showed absence of the natural curve of the neck (cervical curve). He also performed a trial-and-error treatment, where for six consecutive days, I took myorelaxant medication thirty minutes before practicing. In realising that the myorelaxant resulted in a minute

amelioration of movement conditions and symptoms of pain while playing the piano, the neurologist ruled out the possible causes for my symptoms being due to tendon inflammation or even tendon damage (as had been diagnosed by one of the orthopaedic surgeons) and attributed my symptoms to a more general musculoskeletal dysfunction. As a result, he continued his therapy with a combination programme of anti-inflammatory laser treatment in the neck area and acupuncture applied in the whole body. This was the first time in twelve months from the initial injury that I experienced complete absence of my symptoms when I was at rest. However, the recovery was partial, as any attempt to practise the piano would bring about the initial symptoms; nevertheless, these were experienced at a lesser degree of pain and inability to perform dexterous movements. This allowed me to gradually return to a regular practice routine of one hour a day after which I managed to perform for my MMus final recital at a successful pianistic level. Still, this was achieved with severe pain during and after the recital, regardless of the simultaneous intake of anti-inflammatory, analgesic and cortisone-based medication.

My exposure to new concepts about the function of the body by the latter neurologist led me to the next stage of my investigations for a cure, as I was gradually realising that (i) problems in the hands and arms can also occur from deficiencies in other areas and the neck in particular; (ii) problems in the hands and arms can occur due to muscle and/or nerve deficiency (which was ruled out medically, in my case) and (iii) alternative medicine addresses specific ailments from a more general perspective.

1.1.3 Alternative treatments

The entire year of treatments mentioned above taught me that my symptoms may have been caused by musculoskeletal deficiencies. However, the first year of attempts to recover yielded no significant relief from my initial symptoms. Thus, by entering the next stage of my investigations, I turned to alternative medical treatments, which I have since found to be very effective for piano-related musculoskeletal disorders. These medical treatments were Chinese and Japanese acupuncture, Chinese and Japanese (kan po) herbal medicine, Rolfing structural integration, osteopathy, chiropractic and cranio-sacral osteopathy.

I followed treatments in these methods in Switzerland, Canada, Greece and the UK. Receiving alternative treatments triggered a new way of thinking, in which I began to consider the likelihood that my injury was not only a result of long term fatigue of specific muscles but also of the way that I was using those muscles in question. This coincided chronologically with my initiation in the Pilates method as well as my re-training for the acquisition of a new piano technique under pianist and pedagogue Valeria Szervánszky, who is one of the most prominent students of Hans Leygraf in the UK.

1.2 Piano re-education; Tai Chi; Zen; Chinese and Japanese medicine

The second stage of my investigations took place during the second year of my attempts to recover. In this stage I sought treatment from four doctors who practised Chinese and Japanese herbal medicine and acupuncture. These doctors ignored my insistence in curing my specific symptoms in my fingers, hands, arms, shoulders and neck and, instead, focused on detecting the imbalances in my general health. I was, therefore, given the opportunity to consider myself, my body and my mind as a whole (first somatic consideration), as I was encouraged by these doctors to see movement holistically and not only as applied specifically at the piano. I did so by adopting a routine of taking herbal medicine for general issues of my health such as circulation, sleeping state, psychological state and breathing on a daily basis. Also, I received acupuncture treatments twice a week for six months and, upon recommendation of the alternative medicine doctors, attended Tai Chi (a mild form of martial art whose characteristic is slow and even movement evenly distributed throughout the body, often called walking meditation) and Zen meditation classes twice a week.

In addition to the above and at the same time, I received specialised piano instruction by Valeria Szervanszky, herself a survivor of injurious conditions caused by piano playing. Szervanszky started by teaching me at beginners' level, as she felt that I needed to 'forget' my previous twenty years of piano studies. However, she considered me as a formed musical personality, not as a pianist in particular and, with this in mind, guided me through a structured and gradual piano re-education programme. In this programme, the main teaching principle was the consideration of the art of music performance as a whole. I was encouraged to set a general musical

goal with existential implications which I could pursue by following a realistic practice, time and money routine. The next step was to learn to give priority to the musical goal and to lay emphasis on the healthiest means possible to achieve that goal through piano playing. In order to do that, it was indispensable to cultivate an understanding of the piano mechanism and its relation to the effort needed to activate it. Szervanszky initiated me to a new way of piano playing through instant de-activation of the muscles of every individual finger upon hearing the desired sound. This was a new concept for me as I was raised with a pianistic habit of playing "deep into the keys", as a means of "building a solid technique" and "a deep sound". An important tool through which this new routine was achieved was the gradation of repertoire, which Szervanszky suggested according to my individual symptomatic idiosyncrasies, in order to not experience pain or discomfort:

- Pieces based on clusters that aid in understanding the piano mechanism without straining the fingers, for example *Játékok* by Kurtag.
- Simple pieces from beginners' repertoire: pieces from Bach's *Anna Magdalena* collection and his two-part *Inventions*; Schumann's *Kinderszenen* and Debussy's *Children's corner*
- Scales, arpeggios and simple exercises performed slowly and devised during the lesson for understanding of the new technique
- Simple études by Czerny and Berens
- Sonatinas by Clementi and Beethoven

This was a period of learning a radically different approach to piano playing than the one I had been applying. Consequently, this approach took a long time to be realised and put into practice. At the same time, I was learning new movement principles through weekly Tai Chi lessons. I was taught that there are active and passive elements of a movement and that strength and weakness complement each other in various areas of the body. In Tai Chi lessons, balance in movement is strongly linked to the sense of grounding and keeping constant contact with the earth and one learns that movement occurs more beneficially in circles rather than in straight lines; also, hardness and softness in the body are essential and complementary elements of good movement. Last, through a brief exposure to Zen meditation, I experienced the fact

that movement and stillness are closely linked and that the state of the mind can determine the state of the body.

Although the re-education at the piano occurred in parallel with this new understanding of movement and stillness through lessons in Tai Chi and Zen meditation, I found that I was resistant to the adoption of new principles and the understanding of new paradigms. Perhaps this was due to the fact that the basic principles of movement that had underpinned my previous education were linked far more strongly with experiences which served competitiveness and excellence in my career as a music student. Throughout my prior years as a piano student I was taught and convinced that good results can be accomplished only through exhaustive work hours, regardless of the quality of work; also that maximum muscular strength is absolutely necessary in order to learn and accomplish movements well. Therefore, virtuosity and muscular strength were one and the same thing and loud and fast piano playing could only be accomplished through the cultivation of muscles, a concept that I finally and thankfully learned was a misunderstanding that is, alas, being taught to this day worldwide.

Thus, my understanding of specific movement skills at the piano was changing at a very slow pace, but my core philosophy of how movement is generated and successfully accomplished was still unchanging. One possible interpretation of this fact is that I was still experiencing my initial symptoms whenever I attempted to exert effort over a simple daily activity or a pianistic task. The general sense of my own capacities during this period was that my arms and my body in general had failed me. My body was still recovering from a shock (although I was still undecided whether this was purely a musculoskeletal shock or a shock of a combined nature) and my fingers, hands, arms and shoulders were susceptible to injury whenever I exerted either power or speed for a given task. Additionally, my initial symptoms were still triggered by extreme external circumstances other than piano practice such as insufficient sleep, stress and anxiety. Finally, all of the above symptoms were undoubtedly aggravated by my fear stemming from peer pressure that the period of experienced virtuosity in piano playing had a closing date and the faster I re-acquired it the better.

In retrospect, I realise that a key factor that led me to abandon the somatic method of Tai Chi in combination with Zen meditation was my inability to have a clear picture of my general progress and to view myself from a distance. In my defence, my understanding and sense experiences were exclusively somatic. In particular, although I could experience amelioration in my general symptoms of fatigue while practising these two ancient art forms of movement and stillness, I was unable to make the necessary connections that would make me trust this process as conducive to my recovery from specific symptoms of my fingers, hands and arms and to the return to healthy piano playing. Guided by my limited understanding and self-realisation at that period, I felt the need to engage in a method that showed more apparent common elements with piano playing and whose application would be more apparently beneficial to my piano-related musculoskeletal disorder.

1.3 Rolfing Structural Integration; piano re-education; the Pilates Method

The third stage, in which my investigations consisted of a simultaneous exposure to therapy, pianistic re-education and somatic apprenticeship, commenced with Rolfing Structural Integration treatment (Rolf Institute, online). I had previously experienced the advantageous results of this treatment in three sessions that I had the opportunity of having in Canada, which I was not able to continue due to financial reasons. At this third stage, I was fortunately able to afford a full course of Rolfing Structural Integration and the full treatment was completed in two years.

At a therapeutic level, the Rolfing therapist addressed general musculoskeletal issues. The manual intervention that occurs during a Rolfing session, although occasionally extremely painful, has both immediate and long term effects. As I began to experience such effects, there was a release of unresolved tension and pain locally in fingers and hands and release of tension and pain in the neck and shoulder girdle.

However, contrary to my desire and insistence, the Rolfing therapist persevered in working in the areas of the spine, pelvis and legs, claiming that the musculoskeletal imbalance in those areas affected the imbalance in the local areas of my personal concern. Nevertheless, during the course of the Rolfing treatments I gradually became convinced of the interchangeable effects on my whole body. This was due to

the fact that, after a period of six months of treatments, I experienced absence of my initial symptoms both during rest and during piano playing of intermediate difficulty. This was the first time that I could comprehend and relate the general movements of my body with the specific movements needed in piano playing. A characteristic example of this is when, following a session which focused on my abdominal area, the Rolfing therapist described the importance of balance in that area as being equally effective to the rehabilitation of my thumbs and index fingers, which were causing the most trouble in terms of pain, inability to move quickly and the accompanying psychological low state. As part of the Rolfing treatments, the therapist covered principles of Rolfing movement and initiated me into the wholeness of movement. More specifically, I was introduced to experimental movements which proved that movements (or lack of movement) of the spine can affect the movements of my arms, movements of the pelvis can affect the movement of the wrists in piano playing and movements (or lack of movement) of my forearms can affect the movements of my fingers.

Following the first two months of Rolfing treatments and lessons in Rolfing movement, the Rolfing therapist thought that I would benefit from the Pilates Method. She recommended me to Alan Herdman, the first teacher of the Pilates Method in the UK. This was my first contact with the Pilates Method. The focus on building a strong core was completely new to me and seemingly irrelevant to my pianistic issues. However, my first month of attendance in combination with the Rolfing treatments resulted in alleviation of many of my symptoms. Through my two-year rehabilitation programme, I received weekly lessons in the Pilates Method and followed a tailor-made programme for my specific issues, which gradually incorporated elements of the basic mat programme (as described in Chapter 2.2). Through lessons in the Pilates Method, I experienced and learned new concepts regarding movement. I was taught how to cultivate a sense of awareness of every movement performed and the benefits of synchronising breathing with movement. Also, I realised the effectiveness of acquiring a stable torso and strong core for the rest of my movements. At the same time, I experienced a sense of fulfilment and wellbeing that came as a result of a 90-minute Pilates workout and the satisfaction that my specific needs were addressed in relation to the core Pilates philosophy of the function of agonist/antagonist muscles. Finally, I learned postural principles that were easy to experience and remember and a

sense of austere control in movement which had an effect on the way I performed movements at the piano.

During the two-year rehabilitation programme with Rolfing treatments that were accompanied by lessons in the Pilates Method, my piano re-education course incorporated issues of interpretation and their relation to healthy movement. The basic principles of a healthy attitude towards piano practice and performance were now addressed in the specificities of the repertoire that I was studying. This included Debussy's *Estampes*, a selection of Chopin's *Nocturnes, Études, Preludes* and eventually his *Ballades* Nos 2, Op.38 and 4, Op.52.

This third stage of my rehabilitation process allowed me to start engaging in performance again through simple chamber music repertoire such as song and simple instrumental accompaniments. These included accompaniment to a whole bassoon recital with romantic duo and concerto repertoire; accompaniment to a song recital with works by Schumann, De Falla and operatic arias. In other words, the result of this stage was that I started giving concerts with singers and instrumentalists and adopted a low activity routine of practice and performance, as part of my rehabilitation process.

It is necessary to emphasise here again that, during this third stage of my investigations, I observed that treatments in Rolfing structural integration allowed me to re-experience a sense of ability in my muscles, which I was not able to experience with previous therapies. Lessons in the Pilates method enabled me to discover areas of my body that I hadn't addressed in the past and made me conscious of my ability to control my muscular condition. At the same time, re-education at the piano allowed me to view piano repertoire through a more sophisticated lens with a heightened priority on the purpose of performance, the quality of sound and the respect for my body as a prerequisite for the production of a rich and variable sound range and musical expression. Furthermore, this process allowed me to progress in other areas of my life and discover that piano performance is more enhanced when it becomes part of a balanced way of life, rather than the result of over-focused, single-purposed routine. In completing a long series of Rolfing treatments, my therapist explained the psychosomatic capacities of a complete course of Rolfing treatments, which justified

the changes that I had experienced at many levels. She also explained that it was not appropriate for me to be aware of this psychosomatic connection at the initial stage of exposure to Rolfing treatments, as I was too vulnerable and too attached to my initial intentions to consider any further repercussions of a general improvement in my musculoskeletal condition.

Despite the above progress and improvements, there was a drawback in my experiences as related to my initial injury. Any attempt to engage fully and for long hours (such as can be demanded in preparation for a concert) in one kind of specific or general movement (e.g. trills, scales, or sitting, standing, cooking, sleeping etc.) resulted in the recurrence of my initial symptoms. The difference with the initial stage of my rehabilitation was that I now had a set of tools (Rolfing treatments, injury-free piano supervision, the Pilates Method) that could at all stages bring me back to a healthy start once I engaged in a balanced routine of all three. More specifically, if a symptom, such as pain in the forearm, occurred during an extensive rehearsal schedule, I could refer to my Rolfing therapist for a treatment, to my piano teacher for a lesson on analysis of technique and to my Pilates teacher for a rehabilitation programme focusing on the rebalancing of the muscles involved. This was a painstaking routine to pursue for one's adult life. However, the comparison to my general state in the previous years was proof that I must be pursuing the correct routine. In retrospect, it is now clear that my idea of my own situation was compartmentalised: I considered my body as a 'machine' outside of my mind which was broken and needed 'fixing' at times; I was happy for having learned ways to fix this 'machine' but worried that I had not resolved my issue. I attributed this drawback to the fact that I had not mastered the principles concerned and did not doubt the nature of my new set of tools. I, therefore, enrolled on an instructor training course in the Pilates Method with a focus on musculoskeletal rehabilitation.

The Rehabilitation Pilates course was designed by Pilates instructor and physiotherapist Jean Whittaker. There is a plethora of training courses in the Pilates Method that specialise in different outcomes (see Chapter 2.2) and, as a result, focus on endurance, strength, appearance, musculoskeletal rehabilitation, general balance or any requirement that needs to be emphasised by the target population (e.g. dancers, musicians, actors and athletes). I was fortunate enough to be exposed to a body-

friendly training in the Pilates Method which was practiced under a somatic protocol, thus laying emphasis on training teachers to rely on student feedback for every stage of the student's progress, rather than following blindly a dogmatic curriculum. In addition, this course benefited from Whittaker's expertise and experience as a physiotherapist and included rehabilitation techniques and pre-Pilates stages of movement that were designed for the needs of performing artists.

The Rehabilitation Pilates Method two-year teacher training course was structured as follows:

- Fundamental knowledge of anatomy and physiology
- Principles of biomechanics
- Fundamental laws of a healthy musculoskeletal system
- Principles of the Pilates Method
- Pilates Mat exercises – core curriculum: technique and schoolings
- Pilates anatomy – analysis of muscles involved in each exercise
- Evaluation of client needs, capacities and limitations of a Pilates session
- Planning individualised Pilates programs
- Using specialised equipment in Pilates lessons
- Combining principles of the Pilates Method with other modalities:
    - Yoga
    - Dance
    - Singing
    - Instrumental music
    - Acting

In many ways, the approach to practising and teaching the exercises devised by Joseph Pilates and the building of a solid and correct technique in the Pilates Method was very similar to my recent experience of re-training my piano technique: the two experiential activities complemented each other both on physical and mental levels. Thus, the process of learning the specialised applications of the Pilates Method to movement allowed me to justify the need for a more careful and considerate approach to piano playing. I realised that re-consideration of a movement technique needs to be done at a fundamental level and that slow, controlled and focused movement assures

quality and health in the movement. I also experienced that muscular weakness in an area of the body pre-requires tension in a diametrically and biomechanically opposed area of the body and vice versa, which had particularly interesting implications to piano playing. In the Pilates Method as well as in piano playing, endless repetitions of a movement do not guarantee a good performance; rather, a set of ten repetitions for each desired exercise/activity allows thoughtful and controlled movement. Finally, I could experience the connection between the more general state of my body and the more specific state of my fingers, hands and arms through the practice of the Pilates principle, which is that the limbs function better when their movement originates from a strong, aligned centre.

In completing the above training I began to feel that I was, for the first time, able to help other musicians who suffered from signs of poor posture and whose bodies were not sufficiently equipped to deal with the long hours of piano practice. This created a desire to share my experiences and help fellow musicians; thus, I proceeded to study the theory and practice of adult and transformational education in order to learn ways of conveying my newly acquired skills in the form of comprehensive one-day workshops for musicians. The theories and techniques used in the workshops will be analysed at a further stage in this thesis.

1.4 Yoga therapy; problem-free piano methods

In the fourth stage of my investigations, I had reached a condition where my initial symptoms were not generally present at rest or in activity. They occurred only occasionally when high levels of effort were exerted in daily or specialised activities, such as lifting heavy objects for long distances or practising similar piano textures for long hours. My understanding of the functions of muscles revolved around the main principles of the Pilates Method, as mentioned above. My initial symptoms were triggered during piano playing and, in particular, in two distinct elements (and their combination) of piano performance: (i) virtuosity, in which high levels of speed and sound would result in fatigue and (ii) expression, where intense moments of interpretation such as musical climaxes or ends of pieces would result in general tension and specific tension in the hands, fingers and arms.

Tension as a by-product of expressive playing was an issue addressed and analysed during my two-year piano re-education with Szervanszky and it was somewhat improved. However, when in the context of highly demanding piano repertoire, where both virtuosity and expressive gesture were tools for conveying a musical work, my initial symptoms were triggered again and, if not addressed immediately with the regime mentioned above (third stage), tended to aggravate both in intensity and difficulty of reversal. In discussing this with my mother, who had initiated me into the basic philosophy of yoga as an adolescent through the writings of Lobsang Rampa and Indra Nevi and through the practice of breathing exercises for challenging situations, I realised that the Pilates Method addressed issues of movement at a macro level of control but may not be analytical or profound enough as a support for the demands of a pianistic choreography. I was now able to perform at intermediate to high pianistic level but always under the restriction of not being able to reach the professional level of pianistic accomplishment that I had previously attained as an advanced performer of demanding concerto and solo piano repertoire. I was, at this fourth stage, beginning to question the possible validity of psychological and philosophical considerations of both interpretation and movement in piano playing. At the same time, and following one of my workshops on Pilates for Musicians, I had the opportunity to meet Yoga Therapy instructor and bio-energy therapist Jirna Kallidis, a Russian-American of Greek descent, who shared her similar experience of movement re-education following a dance related musculoskeletal injury which she managed to overcome completely with the help of this interdisciplinary branch of Yoga. I therefore decided to enrol on her two-year training course.

During this fourth stage there were parallel developing areas in my investigation. I was providing information on posture and healthy movement to musicians through my knowledge of the Pilates method, both by individual instruction and in public workshops and lectures. Through teaching, I was able to observe and experience both the benefits and limitations of the Pilates Method as a preventive and rehabilitative method of somatic education to musicians. At the same time, I was learning a new approach to movement through Yoga Therapy and I was experiencing therapy as closely bound to somatic education through the lens of Yoga Therapy. In parallel to my further investigation in the field of mind-body disciplines, I was searching for existing problem-free piano methods and was coming to the realisation that the

resolution of the two elements of piano playing that I had not been able to re-master (high virtuosity and intense expression) could not be found in the mere analysis of movement and training of it thereafter.

The course in Yoga Therapy designed by Jirna Kallidis and taught at her private studios is a two-year experiential course. It is traditionally based primarily on hands-on modalities and the acquisition of knowledge through imitation and exchange of therapeutic applications between trainees through the guidance of the main tutor. Although not an accredited course, I felt this to be the right next step in my understanding of my body. The thematic units covered during the course of two years are prioritised in such a way as to initiate trainees into concepts of Yoga Therapy. This initiation into Yoga Therapy principles starts from the exploration of the more tangible physical self, progressing to the emotional self, the intellectual self and finally delving into the exploration of the spiritual self. In the first year, the study is centred around basic knowledge of anatomy and physiology and Yoga anatomy in particular. In addition, the importance of self healing is taught through therapeutic applications of Yoga asanas (postures) and relaxation, where physical conditioning is seen as an immediate effect of mental conditioning. At a theoretical level, the first year covers fundamentals of Indian medicine (Ayurveda) and study of modern and Palaeolithic nutrition. At a therapeutic level, the first year covers various manipulation techniques including massage and quantum touch healing. During the second year, the psychological effects of injury are examined in combination with therapeutic applications such as suggestion and conscious intervention. The most important aspect of theoretical study in the second year of the Yoga Therapy course is the relationship between movement and emotion. At a practical level, students are introduced to the therapeutic applications of yogic breathing, yogic cleansing, visualisation, meditation and distance pranic healing.

The improvement in my piano playing as a result of the acquisition of new experiential knowledge through the Yoga Therapy training course was slow and gradual. Most significantly, I began to view piano practice and piano performance in a similar fashion. In my development as a pianist prior to my injury, I had differentiated practice from performance on physical, emotional and intellectual levels to the extent that performance would not resemble what I had practised at all. This

was a realisation that I was only able to make after a process of accepting new knowledge on a more holistic level and realising the benefits of somatic understanding of the self in a task as specific and focused as piano performance. This new somatic understanding allowed me to view the process of piano performance as a wider artistic process which consists of many interrelated aspects such as learning, practice, interpretation, technique, aural perception, visual perception and kinaesthetic perception. As a result, I ceased to focus insistently on a purely musculoskeletal improvement and started realising the beneficial nature of somatic education for piano performance as a whole.

As I was gaining experience in this new way of understanding movement as part of a general process, I felt more confident and equipped to investigate existing problem-free piano methods, and to experiment with every new finding. I carefully and painstakingly studied and applied pianistic instructions from the piano methods devised by Seymour Fink, Barbara Lister-Sink, Dorothy Taubman, Gyorgy Sandor, Abbey Whiteside and Madeline Bruser. This was a process that had started under my Pilates-oriented understanding of movement in combination with my recent piano re-education and continued through my reconsideration of the philosophy of movement and artistic expression through Yoga Therapy. In the cases of Fink, Lister-Sink and Taubman, the instructions were laid out in a structured manner and were relatively logical and easy to follow on a trial and error basis on given exercises and repertoire excerpts. In the cases of Sandor, Whiteside and Bruser, the process of applying theoretical principles to piano playing was a wider one that encompassed all aspects of an artistic personality and in this sense the process was more somatic. I started to understand the latter three through the application of their suggested views to complete piano recital programmes as well as through my students' progress.

Through the extensive use of the internet I realised that there was an exponential progress in the area of performing arts medicine and in the sensitivity of piano instructors to gradually incorporate principles of healthy movement to piano playing. This was not the case when I first experienced my piano related injury. The amount of available information has since become endless and it exposes two diametrically opposed kinds of piano methods:

1. well informed methods of piano playing based on trustworthy and tested movement principles (examined for their somatic viability in Chapter 3) and
2. commercialised piano methods that have reached a level of inclusion of exercises and detailed examination of movement, nevertheless, based on false grounds or false understanding of the mechanisms involved (piano and human body).

At this stage I felt that I was sufficiently equipped with theoretical and experiential knowledge and, although I had not reached the levels of pianistic virtuosity and stamina that I had achieved in the years prior to my injury, I was able to pursue a medium level recital profile and focus on teaching musicians how to adopt healthy habits of practice and technique.

1.5 Workshops in Somatic Education for musicians; the Alexander Technique

During the fifth stage of my investigations, I became aware of the impact of the Alexander Technique on performing artists. As part of my undergraduate and postgraduate studies at the Royal College of Music, I had received lessons in the Alexander Technique both within the college curriculum and in private tuition. However, the experience of those lessons had not left a lasting impression on me as my main focus as a piano student was purely on pianistic improvement, which I considered as a specialised skill not to be interfered with by external factors. My interest in the Alexander Technique was later re-awakened following an internet search on piano injuries, where the majority of reports from recovered pianists stated the Alexander Technique as the most effective method to deal with practice-related musculoskeletal disorders.

One notion that aroused my interest when reading the above reports was that of the Alexander Technique being a technique one needs to learn at a more profound level than that of any other instrumental technique, including piano technique. This impression coincided with the realisation that the body is not a machine that needs local repair whenever a symptom appears; it is rather a unified whole that performs at its best in balance and harmony. The clinical diagnoses as well as my own

understanding of function and structure had led me to a dualistic way of thinking very similar to that of repairing a machine. Starting from somatic and piano methods that addressed issues in a localised manner, I gradually continued my training through somatic and piano methods that addressed issues in a more general manner. However, not having reached my own levels of pianistic achievement prior to my injury (and having video and audio recordings to prove that there was a better prior achievement on a pianistic level) I felt that there was something I was missing. By now, I had included a monthly routine of consulting alternative treatments for the prevention of any injuries and rebalancing of my body at a musculoskeletal level. These treatments were osteopathy, chiropractic, shiatsu, cranio-sacral osteopathy and acupuncture. Following my injury and thereafter my re-education and training, I had found ways of dealing with piano practice and performance that were based on the following considerations:

- Piano playing is a specialised skill that benefits from a general well being
- Pianists are athletes and should therefore train for strength
- Pianists are athletes and should therefore train for endurance
- Strength and endurance in the fingers are best achieved when the whole body maintains a high level of muscular condition.

Through specialised training in both the Pilates Method and Yoga Therapy I had reached a high standard of general fitness, higher than I had ever reached even before my injury. My pianistic knowledge and skill encompassed information and first hand experiences of tried methods of injury-free piano playing. However, seven years after my initial injury, I still could not reach the pianistic level of ease, virtuosity and expressiveness I had achieved as a student. Any attempt to reach a similar level of pianism found its immediate physical limitations. For the first time, I doubted all the processes that I had followed and wondered whether there was an irreparable damage to my muscles and nerves that was undetectable by science. This led me to suspect that I could still be performing wrong movements with my fingers, hands and arms in piano playing even though I experienced a general sense of fitness in the rest of my body. My doubts were reinforced by the fact that I could not determine whether my condition meant that my piano technique was still wrong or that all the new knowledge I had acquired through the Pilates Method and Yoga Therapy was not

sufficient to cure a possible combination of a defective neuromuscular mechanism and an incorrect piano technique.

Due to the fact that my students were benefiting from the lessons I gave them both in acquiring general quality of movement and pianistic quality of movement, I had sufficient reasons not to refute all my newly acquired knowledge. However, I gave myself the opportunity to apply yet another somatic method in my exploration of a beneficial way of moving, namely, the Alexander Technique. During the three years of this fifth stage, I received individual lessons in the Alexander Technique irregularly as I was based in a city where there were no Alexander Technique teachers. I studied with six different teachers and the frequency of lessons was five days of lessons during term time and one week of lessons during school holidays during which I commuted to the UK. This approximated to thirty six lessons per year. My previous experience in two somatic methods and my simultaneous study of any available literature on the Alexander Technique resulted in an understanding of the basic concepts of the technique to a level where I could sense that my piano playing was improving. However, I felt that, at this stage, I still did not possess sufficient information to be able to apply those concepts systematically in my piano practice.

1.6 Workshops in Somatic Education for pianists; the Interactive Teaching Method for the teaching of the F. M. Alexander Technique (ITM)

This sixth and final stage of my investigations consisted of the steps taken for the completion of a comprehensive understanding of movement from a somatic perspective, and the engagement in academic research:

- Enrolment on the PhD course at Birmingham Conservatoire
- Four year teacher training course in the Interactive Teaching Method for the teaching of the F. M. Alexander Technique
- Finalisation of the structure, content and delivery techniques of the workshops in Somatics for Pianists©
- Complete resolution of all pianistic challenges at a high level of virtuosity and musical expression

My engagement in academic research came as a result of my realisation that in the process of finding an answer to my pianistic issues, I had become passionate about discovering the connection between somatic education and piano performance, about applying this connection to my own development as a performer and about disseminating the knowledge I had acquired to pianists who wish to prevent and treat piano-related musculoskeletal disorders as well as enhance their performance skills.

The four-year training course in the Interactive Teaching Method for the teaching of the F.M. Alexander Technique (ITM) gave me the opportunity to study the Alexander Technique at a highly intellectual and experiential level as well as applying it to my piano practice, performance and teaching. This course was created by Dr Donald L. Weed, D.C. In founding the ITM, Dr Weed was inspired by Alexander's comprehensive and profound writings that are often ignored by many trainers and teachers of the Alexander Technique. In all of this, Dr Weed, himself, was also principally inspired by his teacher, Marjorie Barstow. Ms Barstow was the first teacher to graduate from F. M. Alexander's first teacher training course. The ITM approach to teaching the Alexander Technique is distinguished from other training courses through many of its principles and procedures. As related to my search for understanding movement at a highly skilled pianistic level it is most significantly distinguished and characterised by two teaching applications:

1. The combining of both individual and group classes and teaching processes during the training, and
2. The direct application of the Alexander Technique while the student is in activity.

These two characteristics rendered this teaching and training approach ideal for the purposes of my research. Furthermore, I was able to incorporate somatic techniques for musicians into a workshop situation, where I was overseeing both the group dynamic and the individual progress of the participants. At the same time, I was able to demonstrate the benefits of the Alexander Technique with respect to specific applications.

As will be seen from the analysis of the workshop contents in Chapter 4 (sections 4.4.1.1 and 4.4.1.3), I had previously had to devise my personal method of applying principles of the Pilates Method and Yoga Therapy to the various aspects of piano

performance. The ITM training equipped me with additional tools for the delivery of information about the Alexander Technique that could be used when teaching any given subject. I therefore adopted ITM teaching techniques while teaching other somatic methods within the framework of my workshops for pianists.

The ITM teacher training course for the teaching of the F. M. Alexander Technique consists of seven specific modules taught over four years, each module covering a different aspect of the process of teaching in general and teaching the Alexander Technique in particular:

1. Text analysis and practical application of the basic principles of the Alexander Technique as articulated by Alexander and F. P. Jones
2. The study of the principles of human movement as they relate to structure and function
3. The study of the principles of personal development and interpersonal interaction
4. Manual skills: the use of hands in teaching as it relates to appendicular structures (arms and legs)
5. Textual analysis and practical application of the conceptual foundations of the technique revealed through the study of selected writings of F.M. Alexander in chronological order of publication
6. Manual skills: The use of hands in teaching as it relates to axial structures (head, spine, pelvis)
7. The use of analysis and reasoning for the purpose of creating and delivering spontaneous lesson designs.

This course radically revolutionised my understanding of movement, by placing an emphasis on the concept that what a person is 'thinking' and how he or she is 'thinking' is the most important element that determines the nature and effectiveness of any given movement. As a psycho-physical process, Alexander's work was sufficiently somatic in its foundation to be useful for my purposes and has provided me with a plethora of skills and ideas that have allowed me to expand and enhance my work as a pianist and teacher. In addition to this, the philosophical and practical views of the ITM approach to teaching the Alexander Technique opened up my horizons in every direction: physical, emotional, intellectual and spiritual.

With regards to my piano-related musculoskeletal injury, the ITM approach to the Alexander Technique answered all of the questions I had previously encountered in earlier investigations. More specifically, the Alexander Technique taught me that when both clinical and laboratory diagnoses fail to demonstrate the presence of genetic anomaly, disease or dysfunction, then the problem must come from somewhere else. I realised that the reason for my lengthy search for a "truth" that could explain my difficulties was that I was intent on finding specific resolutions for specific problems generated by causes outside of myself or imposed on myself that would respond to using different specific solution techniques. The Alexander work demonstrated to me that my problem was actually being caused by something I was doing to myself in the manner of my playing (Weed, 2012, has coined the term "propriogenic" to describe this kind of self-caused difficulty). Excitingly, through my investigations, I discovered that this category of problems can be solved through the study of the Alexander Technique. I thus realised that the way in which I played the piano was greatly affected by the general way I moved and the general way I moved was caused by my way of thinking. Therefore, unless I changed that way in which I was thinking – unless I changed the mental direction of myself in activity – then the quality of my movement would not and could not change as a result of either a mere desire to change the movement or physical repetitions of various technical schemes.

As related to piano playing, movement took on a new connotation through the adoption of various ITM principles. I learned that for every movement there is a thought that precedes it, organises, creates and accompanies the movement. That is, there is a causal relationship between thinking and movement. Without this kind of causal thought, movement, and in particular voluntary movement, cannot occur. Another important principle in the ITM is that every movement performed by a vertebrate is cephalo-caudally organised, that is, for animals with a spine the physical motivation for most complex and general movements occurs from the head downwards as if the movement were done in such a way that it could be described by the phrase "the head leads and the body follows". Following a persistent path of dealing with specific deficiencies unsuccessfully, I could now understand and experience that re-education at a general level should precede re-education at a specific level. A principle that applies to all movement and at the same time has substantial implications for piano playing is that muscles can only perform one

simple, mechanical task: they get shorter. The appearance that muscles 'lengthen' in an active way is an illusion, caused either indirectly by the muscle no longer contracting (getting shorter) and thereby returning to its natural resting length in a non-mechanical fashion, or directly by being acted upon by other muscles with antagonist functions with respect to the muscle under consideration. Finally, one of the most important principles that I learned and applied both in my everyday movements and in piano performance was that the only way to correct a wrong movement is to stop doing it (and not to perform another movement in its place in order to correct the initial movement or improve it).

Already from the first year of study in the ITM course my piano-related musculoskeletal symptoms were completely absent, regardless of the hours of practice, the volume of sound, the speed or the intensity of musical expression.

It must be mentioned here that, at the same time as my training in the Alexander Technique during the final stage of my investigations, I received piano lessons from Edna Golandsky, the most important proponent of the Taubman approach. In these lessons, Mrs Golandsky confirmed my correct understanding of the principles of the Taubman approach, which I attribute, in part, to the experience and knowledge I acquired through the years of piano technique analysis I made during my recovery, but I mainly attribute this correct understanding to the ability to analyse movement in all its dimensions through my study of the Interactive Teaching Method.

During this sixth and final stage, as the above combination of training progressed, the result was that I gradually resumed all of my performance activities. What is more, I not only reached my previous levels of virtuosity and musical expression that I had experienced prior to my injury, but I significantly surpassed them all. In addition, a substantial number of students who came to my studio with practice-related musculoskeletal injuries and who participated in the movement rehabilitation programme described herein have completely recovered and are now pursuing successful careers in music universities and conservatoires in Europe and the United States (Conservatorium van Amsterdam, Utrecht University Music Department, Michigan State University, University of Zurich School of Arts, Guildhall School of

Music and Drama, Manhattan School of Music, Mozarteum Music Academy in Salzburg, Conservatoire de Genève, Madrid Music Academy).

In other words, in addition to the many personal benefits that I have received from this comprehensive course, the ITM training also equipped me with additional teaching tools which have enhanced the quality and effectiveness of my Somatics for Pianists© workshops and made them extremely successful. In fact, the revised Somatics for Pianists© workshops that were organised in this new manner and took place during the academic years 2009-2012 have produced 385 valid questionnaires which have offered a new insight into the application of somatic education to piano performance, as well as significant research data.

Summary and conclusions

This chapter gave an account of the six stages of my personal investigations which I embarked on as a result of a piano-related injury, highlighting the difficulties I encountered in discovering the most appropriate approach to piano performance. In addition to a course of conventional and alternative medical treatments I also gradually adopted the practice of three methods of somatic education in the hope to recover from the symptoms caused by the injury. In order to deepen my understanding of movement and enhance piano performance I further trained as a teacher in all of these methods and pursued further studies in piano re-education with expert teachers of problem-free piano playing. The initial difficulties and limitations I came across at the time of my injury were mainly the result of lack of global dissemination of relative information at the time of injury. Further difficulties occurred in the detection and resolution of my piano-related deficiencies which are attributed, in retrospect, to lack of access to piano teaching that encompasses principles of healthy piano performance in combination with principles of somatic substance. The persistent search for a comprehensive way of resolving problems arising from piano performance resulted in a breadth of knowledge that now allows for a global understanding of the issue on my part. However, the time and money spent as well as the psychological and physical upheavals caused are a considerable drawback and raise questions that are of immediate concern in the area of performing arts medicine. The accessibility of a comprehensive pedagogical approach in piano

performance which prevents, cures and re-educates is perhaps an issue that demands further research in the area of piano-related disorders.

In order to examine the potential contribution of somatic education to the area of piano performance, the next chapter will define the wider field of Somatics and three methods of Somatic Education that form part of it, namely, the Pilates Method, Yoga and the Alexander Technique. This will be achieved through a review of the existing literature which will answer some of the research questions as well as provide a platform for a somatic consideration of piano performance. It is also hoped that it will expound the somatic ideas and concepts mentioned in the present chapter, thus justifying the course of this journey from injury to cure and from practical training in re-education to academic research into the potentialities of Somatic Education.

Chapter 2

Methods of Somatic Education

This chapter is organised in four sections: Somatic Education, The Pilates Method, Yoga and The Alexander Technique. Section 2.1, Somatic Education, defines Somatic Education, the theory behind the term and its emanation from the wider field of Somatics. This is done in order to contextualise the primary ideas, principles and concepts of the Pilates Method, Yoga and the Alexander Technique. Sections 2.2, 2.3 and 2.4, The Pilates Method, Yoga and The Alexander Technique respectively, will elaborate on the theoretical concepts of each of the three methods of somatic education. Each section will then address the research question "What is already known in the literature of methods of somatic education regarding problems of performing artists and pianists in particular?" This will be done by offering a review of the literature that examines the impact and the general applications of each respective method and by culminating, where applicable, into the impact of each method upon piano performance.

2.1 Somatic Education

Somatic Education is a relatively recent field of educational movement approaches whose foundational and teaching characteristics are the unity of body and mind, awareness of one's body and conscious movement, all initiated from oneself or the so-called first-person perspective. Somatic Education has emanated from the wider field of Somatics, which has proliferated substantially, especially in recent decades. Within the context of the present thesis, somatic education, which is characterised by a first-person perspective of the self (the self as experienced from within), is introduced as a methodological alternative to traditional piano instruction from a third-person perspective.

This section takes a closer look at the philosophical and ideological origins of somatics; it then explores the interconnectedness between the three physical modalities of the Pilates Method, Yoga and the Alexander Technique and the field of Somatics with particular reference to elements that render these three methods

somatic, and finally discusses the possible impact that somatic education could have on performing arts.

The development of the field of somatics was a result of two significant facts: the limitations of the Western medical practices in treating physical injuries or illnesses effectively and on a long term basis; and the impact that different Eastern philosophical systems had on individuals' well-being. The new field of somatics encouraged and trained people to form a different type of relationship with their body and their mind (Eddy, 2009, p.6). It is a field that has become quite popular over the last decades as a theoretical and practical approach in the context of different disciplines. One of the drawbacks for the wider acceptance of somatics is the lack of empirical data evaluating its effectiveness and comparing its impact in relation to other more traditional methods of improving quality of life through the acquisition of new skills (De Negri, 1996, pp.17-18). However, pioneers in this field support the idea that somatics can teach individuals new ways of experiencing their bodies, enhancing bodily self-awareness, increasing control of their body, becoming pain-free and performing in their daily lives with greater expressiveness (Kleesattel, 2012, p.2; Eddy, 2009, p.6).

2.1.1 Defining Somatics

The term "somatics" was used for the first time by Thomas Hanna, philosopher and founder of Hanna Somatic Education (1976), when he published the *Somatics: Magazine-Journal of the Bodily Arts and Sciences*. The name of the magazine was based on the Ancient Greek word "soma", which meant the "living body in its wholeness". Soma is not objective or static, but it is a dynamic process of adjustment to the environmental conditions (Hanna, 1993, p.6). Hanna explains that soma is the way that a body is experienced within, when someone is using the first-person perspective. However, Hanna developed a more concrete definition of somatics in the following years. According to the newer definition, somatics is the "art and science of interrelational process between awareness, biological function and environment, all three factors understood as synergetic whole" (Hanna, cited in De Negri, 1996, p.10). Another interesting definition of somatics was developed by Matthews (1991, p.89) who suggests that somatics is the "embodied experience of being". As a result of his

definition, Matthews refers to the learning that comes as a result of experiences, and thus involves the senses, perception, mind-body unity, as well as action and reaction. This type of experiential learning is essential for everyday survival and is an important aspect of performing arts and culture. These definitions lay emphasis on the interaction between mind and body, which are theorised as different entities but co-equal, for the survival and well-being of human beings. The difficulty of defining the field is an ongoing one. In this respect, Eddy's creative definition of the field, although philological and metaphorical, encompasses all possible diversions and opens up the way to the future of somatics:

> The field of 'somatics' is barely a field. If necessarily seen as one, I liken it to a field of wildflowers with unique species randomly popping up across wide expanses. (Eddy 2009, p.6)

The primary goal of somatics is to assist people in enhancing their self-awareness and consciousness by teaching them to identify proprioceptive signals (signals that make us aware of the position and condition of parts of our body relative to other parts) within their bodies (Eddy, 2009, pp.6-7). The review of the existing literature reveals the existence of different types of somatic practices, such as the Alexander Technique, Tai Chi, Bartenieff Fundamentals, the Feldekrais method, Yoga, etc. Despite the differences between these methodologies they all share common features:

- belief in the unity of mind and body
- respect for the subjective experience
- development of self-awareness needs time and practice
- ability to change has no age limitation (Kleesattel, 2012, p.4; Schwartz, 2006, p.14)

Despite the fact that the concept of somatics is relatively new, the philosophy behind this field has a long history and it can be traced back to Ancient Greece (Hellenistic era), as well as Eastern philosophical systems (e.g. Yoga, Zen Buddhism, Tai Chi, etc) and primitive ritualistic behaviours (e.g. shamanism) (Schiphorst, 2009, p.71). Appendix B.1 briefly summarises this pre-history of somatics in order to set the appropriate background behind the main tenets of somatic education.

2.1.2 Somatic Theory

A fundamental principle of somatics is the perception of body and mind as soma, thus emphasis is given to inner experiences. There are four features that characterise somatic theory: (i) the unity of body and mind, (ii) the first person perspective, (iii) self-awareness and proprioceptive perception, and (iv) somatic techniques (De Negri, 1996, pp.21-45).

(i) Unity of body and mind

Somatic theory questions dualism which is the central characteristic of Western culture. The dichotomy between body and mind has resulted in many negative consequences, which have affected almost every aspect of human functioning (e.g. academic, medical, linguistic, etc.). Instead, somatic theory draws on Eastern philosophy where the individual is treated as a single unity and not as a composition of different parts (mind, ego, senses, body organs, etc). In other words, this type of approach adopts a holistic perception of human beings.

(ii) First- person perspective

Hanna suggests that there are two ways of perceiving the body; the one is related with the observation of the body from the outside with objective measures, which is called the third-person perspective, and the other is related to what is experienced within the body (soma), which is called first-person perspective (Hanna, 1987 III, pp.3-6). The two perspectives are not in conflict, but they complement each other. According to Hanna, human beings cannot be fully understood by excluding either of these perspectives. It is only when somatic and physiological perspectives, the subjective and the objective aspects, are unified that individuals can overcome health problems and improve their quality of life (Hanna, 1988, pp.19-21). It is necessary to underline that the goal of somatics is not to predict and control life-threatening situations, but rather to enhance the understanding of somatic functions, which are dynamic and changing. The improvement of well-being is a result of the ongoing and increased understanding and not the direct goal (Hanna, 1976, p.5).

(iii) Self-awareness and proprioception

Awareness is a process during which individuals decide to focus on the experience of specific stimuli (whether external or internal) and at the same time exclude the perception of other stimuli (Hanna, 1987 Part IV, p.1). The exclusion of sensory perception is accomplished through motor inhibition. Awareness is an important process for our survival since it allows the identification and control of new stimuli, which will eventually lead to effective adjustments to the environmental demands (Hanna, 1986, p.7). Somatic practitioners acknowledge two elements for developing body awareness: Cohen (as cited in De Negri, 1996) uses the concept of "experiential knowledge" to refer to the personal experience of individuals about the functioning and development of their bodies. The second element is "kinaesthetic sense", which provides useful information about movements of the body and the placement of joints and muscles. Kinaesthetic sense plays an important role in the process of self-regulation and it also allows the assessment of health status. Both experiential knowledge and kinaesthetic sense are essential for developing body awareness (De Negri, 1996, pp.21-45).

(iv) Somatic techniques

A variety of somatic techniques has been developed over the years. Although these techniques may differ in the way they implement somatic theory and in their prioritisation of self-awareness, they do share some basic principles. In particular, these somatic techniques attempt to improve body functioning, enhance proprioceptive perception, improve self-awareness and identify and change negative habitual patterns. Examples of somatic techniques are the Alexander Technique (the study of thinking in relation to movement through which tensions are released, body control is improved and balance is re-established in movement), Kinetic Awareness (exploring movement potential), and Feldenkrais Awareness Through Movement (understanding movement through movement and not theoretically).

Another significant component of somatic theory is comprised of the six somatic functions, which enable the soma to become a unified structural entity and contribute to the process of self-awareness (Hanna, 1976, pp.7-9). Hanna notes that these

somatic functions are equal in value and all of them together constitute the soma. These somatic functions are:

- Timing: it is the function by which the soma structures its processes; it is the process of holistic change.
- Standing: the function of standing is related with "being up"; thus to stand is considered a positive process, since it reflects some type of development. The opposite function of Standing is Falling and is perceived as negative function leading to loss of somatic individuation.
- Facing: this function refers to the way that the soma actively seeks to realise its intentions. Facing is a positive function since it makes the body move towards the fulfilment of its appetite. The negative function related to Facing is Backing, which actually means the withdrawal from realising the intention.
- Manoeuvring: it is the way that the soma decides to respond to its intentions. Forsaking is the negative aspect of this function and refers to the dispossession of the needs.
- Wanting: is the acknowledgement that something is missing from the soma, and there is need to interact with the world in order to acquire it. Wanting is a function that creates emotional responses.
- Intending: refers to the actions taken to motivate the soma to accomplish its intentions within the world.

In summary, somatic theory gives special emphasis to the unity of body and mind, and encourages the adoption of first-person perspective so that individuals will pay more attention to their somatic processes. Developing self-awareness and acknowledging sensory-motor functions are the necessary tools that people could use for achieving the perception from within.

2.1.3 Somatic Education - Somatic Learning

Although there is no commonly accepted definition of the term somatic education, the existing definitions share many common features. More specifically, one of the best known definitions of somatic education has been developed by Hanna, who uses this term to describe the process of achieving greater self-awareness over physiological

processes by using sensory-motor learning (Hanna, 1990, p.1). The word somatic refers to the fact that learning is an internal process that starts within, thus it is self-initiated and self–controlled. Increasing the voluntary control over physiological processes will result in developing self-awareness (Hanna, 1986, p.6; Hanna, 1990, p.1). Joly (2000, p.5) defines somatic education as a field that uses a different methodology for enhancing the learning process of the soma, as it develops awareness through movement in the environment. The comparison between the two definitions clearly states that there is agreement concerning the primary goal of somatic education (i.e. being in touch with the inner processes of the soma) and the results of its application (i.e. greater self-awareness). However, the only difference is that the second definition acknowledges a variety of methods/practices to achieve the primary goal of somatic education. A possible explanation for this is that the second definition was developed ten years later than Hanna's definition, when it was more obvious that different practitioners were starting to develop their own personal strategies for achieving self-awareness and self-control.

In the context of somatic education there are four concepts that constitute the core of its philosophy: learning, awareness, movement, and environment (Joly, 2000, pp.5-7). Somatic learning refers to the ability of individuals to evolve and thus to develop more effective ways of self-regulation. The tool for promoting somatic learning is movement, where the educator can either use verbal instructions or touch. At this point it is important to differentiate between the term "somatic education" and the term "somatic therapy". The latter accepts the existence of some type of pathology, thus the goal is to identify the causes of it and cure the illness or the injury, while the former gives emphasis to the need to improve self-regulation in relation to the capacity of each individual to take responsibility and as a result, either to improve the performance or to treat an injury. It thus becomes obvious that somatic therapy is treatment-oriented, while somatic education has a re-educative scope. Especially within the context of the present study, somatic education is seen as clearly distinct and separate from somatic therapy. The role of somatic educators is to facilitate somatic learning through increased awareness and movement and not to act as healers, although healing may come as a by-product of somatic education (Joly, 1994, p.2; Joly, 2000, p.6). Awareness is a biological function, which regulates the behavioural reactions of organisms, as a response to the stimuli that are identified by

the senses and the brain, either coming from the internal or external environment. In somatic education, movement is approached from the first-person perspective and refers to the way that individuals experience movements from within (e.g. which muscles are felt to be involved in a specific movement or posture). Finally, environment underlines the interrelation between living organisms and the context in which they are living (e.g. culture, societal structure, social groups, etc.). The concept of environment functions as a reminder, since the way that people perceive or think about the soma is influenced to a great extent by significant others, families and societal rules (Joly, 2000, pp.5-7).

Another important aspect of somatic education, in addition to its definition and its basic principles, is to examine the factor that is responsible for the problematic conditions that are exhibited or experienced by the soma. According to somatic education, sensory-motor amnesia is responsible for losing voluntary control of motor action and voluntary sensing of motor action. Sensory-motor amnesia is a condition that characterises all human beings and is the result of long-term stress. The predominant feature of this condition is that individuals lose the ability to sense and control their muscles, which seem to be rigid and immobile. More specifically, muscles tend to present some of the following characteristics: they (i) become weak, (ii) become sore or painful, (iii) lead to clumsiness, (iv) consume large amounts of the body's energy, and (v) lead to bad postures and uneven distribution of body weight, which causes pain and misdiagnosis.

According to Hanna, the rigidness of muscles cannot be attributed to aging factors, to the brain or the musculoskeletal system; the only cause is the accumulative impact of stressful and traumatic stimuli. Moreover, sensory-motor amnesia cannot be treated effectively using medical treatments, since they are essentially effective in treating the symptoms and not the root of the problematic situation. Hanna also claims that somatic education is exclusively effective in dealing with this category of musculoskeletal issues since it enables people to become aware of the sensations or movements of the affected areas and eventually to learn to control them voluntarily (Hanna, 1986, p.8; Hanna, 1990, p.6).

Irrespective of the different methodologies, the process of developing greater awareness can be realised through the use of exercises, sensitive touch, breathing, movements and guided attention (Holland, 2004, p.471; Schwartz, 2006, p.18). Somatic methodologies vary in the degree to which they use the above-mentioned techniques to develop self-awareness, but they all share similar goals. In particular, these goals are to train individuals to: (i) improve their proprioceptive senses, (ii) move efficiently, (iii) generate pleasure, (iv) contribute to greater expressiveness, and (v) result in well-being (Joly, 1994, p.2). The positive effects of increased self-awareness could be changes in body postures, muscle relaxation, improved movements and alleviation from pain (Holland, 2004, p.471). Another benefit of somatic education is its deviation from typical educational procedures, which sets the same standards for everyone and uses objective measures to assess progress. According to Matthews, somatic education recognises and accepts the subjective experience, and thus adopts a more individualised approach towards people, which leads to better learning outcomes, creativity and a sense of well-being (Matthews, 1991, pp. 93-94). Despite the fact that somatic education classes are available to specific professional groups (e.g. artists, psychologists, athletes, etc.), the individual benefits gained are not limited to the context of these professions, but can be generalised in their everyday lives contributing to increased health and ability (Joly, 1994, p.3).

2.1.4 Somatic Education and the Performing Arts

For the purposes of the present thesis the phrase "somatic education" will not be referring strictly to the practice of Thomas Hanna (who founded and coined Hanna Somatic Education) but to the recent field whose birth is officially placed with the writings of Hanna and which encompasses all the first-person perspective and mind-body modalities.

The performing arts have widely accepted somatic education as a significant component of their professional training and curricula (Kohler-Amory, 2010, p.5). It has been introduced mainly for two reasons; (i) to prevent performers from injuries that resulted from the misuse of the musculoskeletal system, and (ii) to improve the performance and expressiveness of the artists (Ehrman, 2008, p.1). However, it

seems that in some performing arts, such as dance or acting, somatic education is more widespread and influential while in others its influence has been established only recently (e.g. musical performance pedagogy).

2.1.4.1 Somatic Education and Dance

Research into the literature on somatic education as well as the existence of a journal created and dedicated to the interrelation of dance and somatics (*Journal of Dance and Somatic Practices*) show that the field of somatics has been embodied in the training of dancers successfully. During the 1970s dancers were involved actively with body-mind techniques in an attempt to improve their performing skills and to decrease the occurrence of injuries. The application of somatics in dance training curricula is characterised by three main principles, the presentation of which is necessary before entering into a discussion of research findings. The three principles are: novel learning context, sensory attunement and augmented rest. The first principle (novel learning context) encourages dancers to give emphasis to body sensory stimuli and be engaged in a process of self-exploration and self-acceptance. Competitiveness is not permitted in the context of somatic education. The goal is not to perform a movement correctly but rather to experience the movement from within. Through this process dancers are developing the ability to identify maladaptive postures or movement patterns which they could not observe before as a result of their traditional dance training. The second principle of sensory attunement helps dancers to pay attention to the experience of inner stimuli. It is an important principle since it leads to sensory authority, which eventually leads to motor control. The third principle of augmented rest recognises the need for a break between movement sessions in order for the nervous system to process information and the physiological system to recover from tension. Although the duration of rest is not agreed upon among the different somatic practices, a minimum of 10 minutes rest is necessary for restoring energy levels and improving motor learning (Batson, 2009, p. 2).

One of the first studies that attempted to evaluate the impact of somatics on dancers was that of De Negri (1996, pp.226, 234-239, 246-252). The purpose of the study was to investigate the experience of acquiring movement skills from the perspective of learners themselves. The sample of this study consisted of synchronised swimmers

and dancers. The study yielded some interesting findings. Firstly, subjects showed a positive attitude towards the use of the first-person perspective. They felt that the understanding of their experiences or body image that resulted from its application affected their performance in a positive way. Furthermore, subjects reported positive changes related to levels of body awareness, self-control and self-confidence. They reported feelings of empowerment, strength, as well as better control of their bodily functions.

Schwartz (2006, pp.20, 59-64) evaluates the impact of somatics from the point of view of choreographers. He argues that somatics can influence the relationship between students and choreographers, between students themselves and between choreographers, students and the environment. The development of bodily self-awareness and control provides students with a sense of authority over their capacity to learn new skills and to teach themselves. In this study, Schwartz evaluated the influence of somatics on his dancers and other artists, while they were in the process of developing choreography, a time period which had a duration of nine months. Schwartz divides the conclusion of his study into two categories: one related to personal gain and the other related to the benefits that were observed by the dancers, which affected him as a choreographer. The personal gain from the application of somatics was the opportunity to explore many and contrasting ideas during the preparation of the choreography. In relation to his dancers, he states that somatics enabled them to re-frame their ideas about authority and offered them opportunities for conversation, reflection and re-evaluation of the different paths to become an artist. Schwartz also emphasised the fact that somatic education is very different from the traditional forms of choreography and this is something that was also evaluated positively by the dancers.

Batson & Schwartz's study (2007, pp.49-54) explores the impact of somatic education as a preventive tool to avoid injuries from repetitive muscular movements. The authors report a contrast between a) the need for a continuous, muscular practice as a means to improve professional skills and b) the principle of somatics used for rest. Excessive, sustained patterns of sensory-motor practice eventually lead to physical and neurological injuries from overuse. This situation is also typical for musicians. In the context of this study dancers were exposed to a period of rest for thirty minutes

after a dance session. Moreover, they implemented components from other somatic practices, such as Body-Mind Centering (BMC), the Alexander Technique and Ideokinesis. Research findings not only questioned the traditional dance practice involving a conscious, uninterrupted kinaesthesia (so-called sensory-motor continuum) but also underlined the necessity for augmented rest from activity after a session of repetitive movements. The application of somatic education resulted in prevention of overuse syndromes. Finally, the authors encourage dancers to consider somatic education as a learning process which brings them closer to their bodies and experiences, rather than addressing conventional rehabilitative or preventive tools.

2.1.4.2 Somatic Education and Acting

The Alexander Technique and the Feldenkrais Method were among the first influences of the somatic practices in the acting field. However, following these pioneers (F. Matthias Alexander and Moshe Feldenkrais) a new generation of somatic practitioners or teachers emerged. These somatic teachers developed their own methods, which are included in actors' training, such as Wendell Beavers who promoted the principles of Body-Mind Centering [sic.]. One of the positive impacts that somatic education has on actors is the re-patterning of negative habits which restrict their ability to perform a role to their full potential. The term re-patterning refers to the accomplishment of changes in neuromuscular reactions through repetitive patterns. Moreover, somatic education improves movement skills and allows actors to be more creative in building their roles. Additional to the movement and expression benefits of somatic education, actors seem to develop a better emotional connection and willingness to take risks in their performances (Kohler-Amory, 2010, pp.8-11). Smith (2010, p.26) suggests that somatic education allows actors to deal effectively with their blockages through the use of specific techniques (e.g. breath, anatomical visualisation or touch), in order to overcome their limitations and become more effective in their performances.

2.1.4.3 Somatic Education and Musical Performance

Recently, somatic education has been applied in the music field to prevent or treat postural or movement problems, which are often ignored by musicians in their

attempt to develop their complex performing skills. The experience of applications to dance and drama suggests that somatic education could be very beneficial for musicians for several reasons. Firstly, somatic training helps musicians to prevent the development of neuromuscular maladaptive patterns, which eventually lead to injuries. It trains individuals to move efficiently, to pay attention to their body and thus not to ignore strain. Slowness of movement is used by somatic educators to enable musicians to become aware of their harmful patterns of movement. In addition, somatic education uses a holistic approach and takes a number of factors into consideration (e.g. physical abnormalities, attitudes or emotional states, etc.) in order to guide individuals to alter their dysfunctional movement patterns. A fourth advantage of somatic education as applied to musicians is the use of an individualised approach, where, after developing bodily awareness, musicians decide what option is best for them. Finally, as is the case with other performing arts, the main goal of somatic education for musicians is not to heal, but to train musicians to introspect and develop more self-control in order to reduce maladaptive musculoskeletal patterns (Ehrman, 2008, pp.1-7).

The search for scientific studies relating somatic education and piano performance revealed the lack of research in this area. Taubman was the first of an increasing number of published piano pedagogues of the 20th century to consider piano performance as a choreography of the hands (Taubman 1995). Later research suggests that application of somatic education will have a positive impact for pianists too. More specifically, Fink (1999, p.177) argues that "…specialised athleticism makes us in effect dancers of the keyboard". In describing piano performance, Rosen (2002, pp.24, 30) states that "the graceful or dramatic movements of the arms and wrists of the performer are simply a form of choreography...."; [this choreography] "…has a double practical function. It tells the audience what the performer is feeling when the actual sound may be inadequate for that purpose. The choreography has a purpose for the performer as well....it becomes a way of conducting the music or a kind of self-encouragement" (ibid, p.31). Moreover, Fink (1999, p.177) concludes his book on *Mastering Piano Technique* with the following:

> As pianists we essentially choreograph an evolving aesthetic ideal, aware that our musical insights and inner hearing guide the movements that

> give birth to the music's emotional power and meaning. In this exhilarating experience of creation lies the joy of making music, in practice and performance.

Additional characteristics that indicate the relevance of somatic education to piano performance are that piano methods aim at the development of virtuosity without any musculoskeletal repercussions, and the use of similar principles to those of somatic education, such as sensory-motor learning, understanding of movement capabilities and awareness, are cardinal foundations to problem free piano playing. In particular, two of the most prevalent pianistic approaches that induce injury free playing, the Barbara Lister-Sink method and the Taubman Approach, promote "the importance of kinaesthetic awareness in developing a new technique" (Milanovic, 2011, p.50).

2.1.5 Three methods of somatic education: Yoga, the Pilates Method and the Alexander Technique

The present thesis explores the effects of somatic education on piano performance through the application of three different somatic education approaches. The following section explores the conceptual, practical and philosophical relation between somatic education and these three physical modalities, which enabled its formation: (i) the Pilates method, (ii) Yoga, and (iii) the Alexander technique.

Schiphorst (2009, p.52) and Eddy (2009, p.10) highlight the determinative role of Delsarte in the area of movement and self observation and they comment on the plethora of his followers, students and practitioners of his teachings. Additionally, F.M. Alexander is placed as both a recipient of instruction in the Delsarte Method and a strong link between Delsarte and important contemporary educators, dancers and choreographers. Joseph Pilates is also considered as part of the influential sphere by Eddy (2009, p.7) and Rouhiainen (2010, pp.57-69). Finally, Yoga seems to be considered as one of the main influences of founders of somatic movement trainings by Eddy (2009, p.7), while Schiphorst (2009, p.71) cites Yoga as one of the Eastern concepts that influenced two of a long list of educators.

2.1.5.1 The Pilates Method as a method of Somatic Education

Joseph Pilates was a fervent supporter of the somatic prototype. According to Rouhiainen (2010, p.57) Pilates is seen as one of the first practitioners of body-mind work encouraging students' body awareness and functional abilities. Pilates' own instructional manuals lay great emphasis on the balance of body and mind, linking the practice with the ancient Greek ethos. Pilates considers the co-equal development of one's ability to control one's body and mind voluntarily as the ultimate Greek ideal, which he claimed his method, Contrology, was able to provide.

The components that place the Pilates method within somatic education, apart from the recognition of body-mind interrelation, is the focus that Pilates gives to body awareness and control and the acceptance of subjective experience and deep synchronised breathing as a technique that facilitates the process of self-awareness. However, there is a need to underline that the Pilates method may not be considered somatic in all of its aspects. More specifically, although it is somatic in terms of using the first-person perspective and bodily awareness, it differentiates itself from the somatic field in that it does not use an individualised approach in relation to the goals and the methods of realising them (i.e. it uses instead, predetermined goals and a predefined manner of application) (Rouhiainen, 2010, p.60). However, later contemporary applications of the Pilates method such as Body Control Pilates and Stott Pilates have begun to acknowledge the need for a more individualised approach (see Section 2.2).

2.1.5.2 Yoga as a method of Somatic Education

Hanna (1993, p.163) considers Yoga to be "the most ancient of all disciplines in somatic education". By considering the yogic self in parallel with his conceptualisation of soma, Hanna argues that Yoga also aims for non-somatic goals such as the culmination of freedom in the liberation of the spirit from the body. However, the goals of *samadhi* (the higher level of focused meditation) and *nivritti* (spiritual contemplation) as taught by B.K.S. Iyengar are non-dualistic: they are the ultimate aims of Yoga practice and philosophy, the realisation of the self and the total unification of the body, mind and spirit (Iyengar, 2008, pp.46, 52-53). Hanna (1993,

p.163) considers the eight limbs of Yoga to be progressive stages of "awareness and control of progressively subtler somatic functions". The last limb of Yoga, the union with the divine, is regarded by Hanna as the point of liberation of a yogi, which is reached through mastery and control of "all somatic functions". Today, Yoga is perhaps the most accessible method of somatic education which attracts students precisely for its pivotal trait of reminding members of a modern society of their mind-body connection (see Section 2.3).

2.1.5.3 The Alexander Technique as a method of Somatic Education

A careful study of Alexander's texts reveals that he never used the term "somatics". However, the use of other terms such as kinaesthesia, sensory awareness and feeling lead many practitioners of somatic education to consider his work as foundational and central to the field of somatics (Rosenberg, 2008, p.35). In his account of John Dewey's first impression of the Alexander Technique, Jones reports Dewey's surprise after his initial learning experiences at the fact that these were an affirmation of the unity of mind and body (Jones, 1997, pp.96, 97). Indeed, Alexander himself argues that "the great phase in man's advancement is that in which he passes from subconscious to conscious control of his own mind and body" (Alexander, 1918, as cited in Jones, 1997, p.24). In the chapter "Evolution of a technique" Alexander (1997 [1932], p.409) relates his conceptual discovery, which later on sets the foundation to the whole field of somatics: "…it is *impossible* to separate 'mental' and 'physical' processes in any form of human activity". The unification of body and mind takes on a similar connotation in Alexander's work and the ancient yogic considerations. However, the means, the techniques of reaching what Alexander called "the indivisible unity of the human organism" and the yogic limb *samadhi* are different and the ways of conveying their respective somatic philosophies are also different. Methods of somatic education promote the notion that the vast majority of muscular pains are the result of misusing our bodies. Alexander attributes this misuse to wrongful data that the mind receives from a debauched kinaesthesia. The solution to musculoskeletal problems in the Alexander Technique, which is also embraced by later methods of somatic education, results from the enhanced awareness of psycho-physical processes (Hanna, 1990, pp.1-12, Rosenberg, 2008, p.34- 38).

As this thesis deals primarily with the practice of somatic education and its application to piano performance, it will focus on the branches of somatic inquiry that have most significantly influenced founders of educational methods that have been conducive to music performance: the Pilates Method, Yoga and the Alexander Technique. Interestingly, in the last four decades, the Pilates Method, Yoga and the Alexander Technique have gained popularity among musicians, thus justifying the connection with Delsarte's multiple capacity: that of a dancer, actor and performing musician. The three suggested methods of somatic education comply with the somatic prototype set by Hanna (1976, pp.30-34) even if they do not form part of the direct student-teacher lineage of what is considered by most dancers/researchers the somatics pioneers, amongst others, Laban, Dalcroze, Delsarte and Freud.

Thus far in this chapter, I have looked at the development of the field of somatics from its ancient conceptual origins to modern day applications. The three chosen methods of somatic education, the Pilates Method, Yoga and the Alexander Technique have been examined through the somatic lens and somatic education has been considered as a complete and distinct branch from other somatic modalities (especially somatic therapy) and has been examined as to its appropriateness to facilitate modern pianistic considerations. In the next section I shall look through the theoretical foundations and the practical applications of the Pilates Method in order to examine whether it can be viewed as a somatic method. I will also examine any existing applications of the Pilates Method in the performing arts.

2.2 The Pilates Method

The development of the Pilates Method originated from the need of Joseph Pilates to keep a healthy body and mind that would protect him from the physical and psychological stressors, which he saw as the cause of a number of diseases. During the past decades the Pilates Method has become very popular in Western societies and a large number of individuals are engaged in regular practice of this exercise approach (Curnow, 2010, p.5; Rouhiainen, 2010, p.57). In particular, it is estimated that over five million people in the USA are practising some form of the Pilates Method (Chang, 2001). In recent years the practice of the Pilates Method has been adapted to be accessible by all, irrespective of their age or their physical condition (Reyneke, 2002, p.14).

This section will be an attempt to enhance the understanding of the Pilates Method by a journey through the circumstances that have contributed to its development. A comparison between the initial and the modern form of this method will be a useful source of information concerning its evolution through the years. Finally, there will be an evaluation of the effectiveness of the Pilates philosophy of movement on different sectors of the population with a special emphasis on its impact on individuals involved with performing arts.

2.2.1 The development of the Pilates method

The Pilates Method is a relatively new form of movement; it was developed in the early 20th century and rapidly became influential within the exercise field (Curnow, 2010; Robinson et al., 2002). The founder of this holistic approach of physical movement was Joseph Hubertus Pilates and his method was developed gradually and systematically throughout his lifetime (Ziegler, 2012). Appendix B.2 gives a description of the steps that Pilates took for the development of his new movement culture.

2.2.2 Contrology: The theory behind the practice

Pilates' original exercise system was an amalgam of Western and Eastern philosophies which included 34 different exercises for strengthening the body (Irez, 2009, p.15; Reyneke, 2002, p.16-18; Rouhiainen, 2010, p.63-65). Pilates did not develop in written form a structured and cohesive description of his method; he solely used apprenticeship to train his assistants. However, the core beliefs of his theory and methodology are described in the two books he published: *Your Health* (1934), and *Return to Life through Contrology* (1945). The first book is a description of the formulation of the theoretical aspects of his method while the second consists of both theoretical and practical aspects of his exercise system to achieve physical and psychological health (Latey, 2001).

More specifically, Pilates argues that the main goal of his exercise system is to help ordinary people to realise the consequences of the modern, sedentary way of life and to assist them to attain a better physical condition. Health and happiness are two concepts of great importance for Pilates' work. He believed in the necessity of developing both mental and physical health and supported the idea of preventing instead of curing diseases. The balance between body and mind is a pivotal aspect of his theory and he describes it as the result of three actions: (i) conscious control of muscles, (ii) correct utilisation of principles applied to the skeletal system, and (iii) understanding of the movement principles when the body is in motion or in sleep. Balance between body and mind can be achieved through acquiring mental and physical health and the skills for supreme performance. In other words, the coordination between body and mind is essential for achieving two goals; to live a healthy and happy life and to achieve maximum results with the minimum impact on the individual's physical and mental condition (Pilates, 1998a [1934], pp.2, 7). These tenets that support the equilibrium between body and mind are in complete agreement with the later somatic considerations conceived and expressed by Hanna.

In addition to giving emphasis to body and mind interactions, Pilates also observed the importance of forming positive patterns of life in childhood. In particular, he believed that children are malleable to the influence of adults so that positive or

negative patterns of life can easily be formed during this period of life. If adults invest time in forming good habits there will be no reason in the future to invest time and effort in changing or replacing ineffective patterns of living. One of the first lessons that adults must teach children is to breathe correctly, which in terms of physical posture is translated into drawing the stomach in and throwing the chest out, holding the breath for a short time (Pilates, 1998a [1934], p.42). According to Pilates "correct breathing reduces heart strain, purifies the blood and develops the lungs….Lazy breathing converts the lungs….into a cemetery for the disposition of diseased, dying, and dead germs…and a haven for the multiplication of other harmful germs" (Pilates, 1998b [1945], p.13).

Pilates prompted people to pay attention to issues of hygiene, healthy diet, sleep and relaxation. He argued that proper diet, enough sleep and relaxation have a complementary role combined with exercises in achieving physical and mental health. Pilates believed that people must consume enough food quantity to be able to restore the energy that has already been consumed by physical activities but at the same time to have enough energy left if extra demands are made to meet emergency situations. Having food simply for receiving satisfaction from the consumption of it is considered unwise and dangerous by Pilates. Excess weight increases the possibility of diseases, since it produces unnecessary muscular fatigue but also obstructs the good functioning of the heart and breathing mechanisms. In relation to hygiene, he claimed that it is of great importance to have clean and open skin pores, thus permitting perspiration to eliminate dangerous substances from the body. Finally, Pilates encouraged people to sleep in dark, quiet rooms when they are seeking a feeling of mental calmness. If they are stressed, he suggests that they should perform some of his exercises, because physical fatigue from these exercises is more beneficial than the fatigue caused by life stressors (Pilates, 1998b [1945], pp.19, 20).

To summarise, the exercise system that Pilates called "Contrology" aims at coordinating body, mind and spirit, in order for individuals to be able to understand and control their body (body awareness). The proper practice of these exercises will help individuals to develop a natural rhythm and coordination. Thus, Contrology results in developing the body as a whole - not merely strengthening specific muscles - correcting postural problems by increasing the strength and flexibility of the body,

restoring a balanced physiological functioning and soothing the mind (Pilates, 1998b [1945], pp.9, 10; Selby and Herdman, 1999, p.5).

The holistic approach of the Pilates Method consisted of numerous exercises; some estimations indicate that there are more than 500 specific exercises, which could be performed either on a mat or using specific equipment that he designed himself aiming to strengthen the core muscles, to improve movement and increase endurance and flexibility (Irez, 2009, p.14, 15; Ziegler, 2012). Pilates also designed and used special pieces of equipment to permit individuals to practice low-resistance exercises, such as small barrels, spine corrector, wonder (Wunda) chairs and toe corrector (Lorenzo, 2011, pp.355-358; McNeill and Phyty, 2011, p.104). The role of springs in the equipmens devised by Pilates is to create external load for the muscular system in order to strengthen it. Regardless of the type of equipment that will be used, there is always the suggestion that the training programme will implement exercises increasing progressively the external load and taking into consideration the individualised needs of each person (Loss et al., 2011, p.165,).

The original method that Pilates developed has been altered since his death. Although the main principles of his methodology have remained the same, there were some new additions. Exercises have been modified and simplified into progressive levels to help beginners adjust easily to the demands of this programme (Latey, 2001; Reyneke, 2002). The Stott Pilates system also introduced some changes to Pilates' original program by adding preparatory exercises to assure safety and to keep a neutral spine position (Segal, Hein and Basford, 2004). The adjustments to the original form of the Pilates Method have been the result of advancements in the fields of anatomy, kinesiology and sports medicine (Latey, 2001, p.279; Rouhiainen, 2010, pp.57, 66).

The existing schools of the Pilates Method can be classified into two categories; the traditional or repertory approach and the modern/contemporary approach (Latey, 2001, pp.278-282). The traditional approach follows the initial exercises developed by Pilates using a specific sequence of exercises and a specific number of repetitions. It is a fast and demanding programme from the start. However, the only difference from the original approach is the existence of some minor modifications of the

exercises in relation to the body type or health problems of individuals. Modern Pilates can be described as a structured programme of exercises connecting body and mind, aiming to achieve efficient movement, improved performance and core stability (Anderson and Spector, 2005, p.6). This modern approach introduces more significant changes in a larger scale in comparison with the traditional approach. In particular, there is progressive introduction to the Pilates method, through the use of pre-Pilates exercises. It is an individualised approach which takes into consideration the specific needs, strengths or weaknesses of each person. In highly developed and individualised approaches emphasis is given to the findings from other disciplines related to movement, such a psychology, physiology or neuropsychology. In other words, the differences between these two approaches are the following:

(i) the traditional approach allows little modification, while the modern can be more creative and adjusted to personal needs of the clients,

(ii) the traditional approach is more static, while the modern utilises recent research findings to adapt the original theory and methodology, and

(iii) the traditional approach lays emphasis on the flat back as the ideal position, while the modern approach considers the neutral spine with its natural curves as the ideal starting position.

Another interesting aspect of the Pilates Method is the type of people who choose to engage in this exercise method. Souza and Viera (2005) set out to shed more light in this direction having as their primary goals to describe the people who participate in Pilates training and their motives, as well as whether pain is one of these motives. The study took place in Brazil and the sample consisted of 327 individuals (women = 266, men = 61). The analysis of the data has yielded some interesting findings: a large number of participants were middle-aged women, who did not participate in other regular exercise, besides Pilates, and who reported pain or musculoskeletal disorders. Although 73% of the participants reported that they experienced musculoskeletal pain before taking part in the study, the primary motive for attending this form of exercise was the need to improve their posture and their flexibility. A second motive was rehabilitation, and a very small percentage of the participants claimed that their motive was to be physically active. In relation to the psychological benefits from the participation in this exercise, many participants reported

improvement in mood or stress levels and some stated that relaxation was an important benefit.

2.2.3 The principles of the Pilates Method: original and contemporary

A careful reading of Pilates' two books reveals that his method was based on six fundamental principles (Garcia, 2011; Latey, 2001; Ungaro, 2004):

1. Concentration: this method demands constant concentration on what is being done, keeping the posture and performing exercise correctly.
2. Control: concentration is important in Pilates because it facilitates movement control. Muscular control contributes to a good posture and consists of controlling not only the large muscles of the body, but also the direction of the head, wrists, toes, etc.
3. Centering (*sic*): the first part of the body that a person should try to control is the centre or the 'powerhouse' of the body. In particular, the centre of the body consists of the pelvic floor and lower abdominals. In other words, it consists of three different muscular systems; abdominals, gluteals and lower back muscles. This specific body area is considered as the core strength area of the body.
4. Flowing movements: all the movements should be performed smoothly, without any excessive rush or slowness. The flow of each movement should be in accordance with the rhythm of breathing.
5. Precision: the positive impact of practicing the Pilates Method will only be achieved if the exercises are performed correctly. Precision presupposes continuous practice, especially for the most demanding exercises.
6. Breathing: correct breathing is important for gaining the maximum benefits from the performance of the exercises. Breathing and movement are interrelated. Individuals must learn to exhale at the point where greater effort is expended and they must avoid catching their breath when performing difficult parts of an exercise.

However, the reformers of the original Pilates method have suggested some additional principles. Specifically, Thomson and Robinson (cited in Robinson and Fisher, 1998,

p.22) add two further principles to Pilates' original ones: relaxation and stamina. Relaxation is considered to be the first step when an individual starts to practise Pilates, since it is necessary to learn how to identify and release muscle tension. Stamina is related to the level of endurance that is developed as a result of continuous practising. Massey (2009, pp.10, 11) adds four further principles to the fundamental six, which are: (a) alignment, referring to a correct posture, giving emphasis to the neutral spinal position (this is according to the modern approach on Pilates) (b) coordination, referring to coordinated movements which demand continuous practice, which eventually can lead to better levels of performance and set the basis for further development, (iii) stamina, describing the improvement of muscle endurance and strength, and (iv) lengthening, relating to the flexibility of the muscles, which is essential for performing the exercises correctly. Herdman and Paul (2007, p.7), teach three more principles, which are: (i) imagination: referring to the visualisation of the muscles participating in a movement, because this enables the person to isolate and control them more easily, (ii) intuition: the growing understanding of the body will allow the individual to evaluate the body condition and take the necessary actions, and (iii) integration: refers to the ability of a person to consider and implement all the necessary steps for a performing the Pilates method, such as body awareness, breathing, activating the muscles and performing the movements rhythmically and without imposing unnecessary strain on the muscles.

2.2.4 Impact of the Pilates Method

Over the years the Pilates Method has broadened its original scope to include both a proactive and restorative function. The main objectives of this exercise system are to improve physical strength, flexibility, endurance and overall well-being by acknowledging the importance of core strengthening, posture, as well as the coordination between breathing and movement (Herdman and Paul, 2007, p.6; Segal, et al., 2004, p.1; Venugopal and Anbalagan, 2013, p.102). In this section I will describe the benefits of participating in Pilates training, but for practical reasons they will be categorised into two groups; the first group will be related to the benefits of practising at proactive level, while the second will refer to the advantages of using Pilates as a method of rehabilitation.

People who either practise themselves or train other individuals in the Pilates Method report several improvements from engaging in this method regularly. Specifically, Garcia (2011), using her own experience as a student of this method, argues that the benefits from practising Pilates can be observed in terms of:

- Improved posture: Pilates helps individuals to re-align their spine by maintaining its natural S-shape, which consequently leads to correct posture.
- Relief from pain: a direct result from correct body postures and re-alignment of the spine is the reduction of low back pain.
- Increase of strength and stamina: the emphasis given to "core" muscles eventually leads to improved strength and stamina, by avoiding unnecessary loads to the muscular system.
- Improved balance and coordination: the strengthening of the "core" muscles and the re-alignment of the spine has another advantage; better balance and coordination, which could be very beneficial for certain groups of people, such as the elderly or people with movement disabilities.

Ziegler (2012) also identifies similar improvements, but his approach is more detailed. In particular, the common features that he shares with Garcia are the emphasis on core muscles, the reduction of low back pain and improvements in balance and stability. He underlines the necessity of strengthening the core muscles, based on the scientific findings that only strong core muscles can lead to powerful extremities. This scientific finding is of a great importance for people who need to have strong extremities for professional reasons, such as athletes or dancers. Ziegler also supports the idea that strong core muscles and improved flexibility will lead to the reduction of pain levels. In relation to balance and stability, he gives emphasis to the older population, stating that the gentle and controlled movements of the Pilates Method are safer for their bones and joints. Participation in this type of exercise will eventually increase their stability and balance and will offer them a better quality of life. Body awareness is another improvement resulting from practising correct breathing, which offers a better quality of movement and correct posture. Moreover, correct breathing in combination with slow body movements can play a significant part in the relaxation process, thus reducing stress levels. Finally, Ziegler

acknowledges several other benefits from practising Pilates, such as improved flexibility, endurance and reduction of body fat.

The popularity of the Pilates Method has not been limited to achieving a good fitness level; application of the method has also been expanded to rehabilitation contexts (Anderson & Spector, 2005). Since 1990, health care practitioners have used Pilates in various fields, such as chronic pain, orthopaedics or geriatrics, to assist individuals to increase performance and efficiency of movements. A very important component of the rehabilitation process is the strengthening of "core" muscles by using equipment that both facilitates the movements and allows a safe and quicker recovery. Patients are re-educated in healthy movement patterns and develop a better understanding of their body in order to avoid putting extra burden on their musculoskeletal system which often causes fatigue and increases the risk for future injuries. Polestar education is one form of how the Pilates Method is applied within rehabilitation contexts. Polestar education can be divided in three phases:

- Phase One - Assistive movement: patients' movements are facilitated by the use of springs, which restrict the unnecessary muscle movement and reduce the levels of pain experienced.
- Phase Two - Dynamic Stabilisation: this refers to the control of newly acquired motor skills by decreasing the support or assistance that has been received in the previous phase.
- Phase Three - Functional Re-education: this refers to the acquisition of motor autonomy, both in familiar and unfamiliar contexts.

The application of the Pilates Method as a rehabilitation method increases the elasticity of connective tissues, which significantly improves the clinical picture of diseases, such as osteoporosis, chronic system arthritis or degenerative disc disease, etc. Furthermore, Pilates can mobilise the nervous system in a way that conditions such as ischaemia, paraesthesia or decreased motor control can be reduced (Anderson & Spector, 2005, p.6).

In conclusion, several authors seem to argue that the Pilates Method is an effective method for improving the well-being of individuals, both on a physical and mental level. Moreover, the benefits from practising Pilates seem to be significant at a

restorative level, improving the clinical picture of injuries or reducing the symptomatology of chronic organic situations.

2.2.5 Empirical evidence on the Effectiveness of the Pilates Method

There is, to date, little serious empirical study of the effectiveness of the Pilates Method. The review of the existing literature on the Pilates Method reveals a controversy. The increased popularity of this method is not supported by research findings since there is lack of studies assessing its effectiveness. In the few cases of research studies these are characterised by many methodological flaws, which indicates the necessity for a careful interpretation of the findings (Anderson & Spector, 2005; Lim et al., 2011). The existing studies will be classified into two categories; the first group will consist of studies assessing the effectiveness of the Pilates Method on the healthy population, while the second will focus on people with medical problems or conditions.

2.2.5.1 Effectiveness of Pilates on the healthy population

The study by Segal et al. (2004) was one of the first attempts to evaluate the impact of a Pilates programme on the healthy population in relation to changes in flexibility, body composition, health status, and even considering possible side effects from its practice. The study sample consisted of 45 individuals (n = 45), the vast majority of them being women who practised Pilates in small groups for a period of six months one hour per week. Research findings indicated that flexibility improved, which the authors consider an important benefit since it can contribute to enhanced physical performance and reduced risk for injuries. However, there were no significant changes in relation to body composition or perceived health status, which can be partly attributed to the frequency of practising Pilates on a weekly basis. After a period of two months a follow-up took place. There were some indications of improvement in relation to the perceived health status. This finding supports the idea that for observing changes related to body image and body composition a longer and more demanding Pilates programme is essential.

Bernardo's study (2007) reviews the existing studies on the impact of the Pilates Method on the healthy adult population. In particular, three studies were evaluated and the results revealed that the Pilates Method was effective in improving flexibility, activating muscular systems and acquiring stability in the lumbar-pelvic zone. Despite the positive impact of the Pilates Method, the author underlines that the existing studies are characterised by methodological flaws in terms of sample size, or research design and procedures, which demand careful interpretation of the research data.

Another interesting study is that of Irez (2009), who investigated the impact of Pilates on elderly women (over 65 years old). Women with health or neurological problems were excluded from the sample. A control group was used to allow comparisons between the two research conditions, "Pilates group" and "No exercise group". In total, sixty women participated in the study (n = 60), equally distributed in the two groups: exercise and control group. The Pilates group participated in a 12-week programme consisting of hourly sessions, three times per week. Significant findings have emerged from this study, since it was revealed that the Pilates group exhibited increase in bone mineral density, decrease in the number of falls, improved balance, flexibility, muscle strength, better anxiety scores and overall better quality of life in comparison with the control group.

A more focused study was conducted by Irez et al. (2011) who investigated whether the improvement in specific variables could reduce the risk of falls in the older population. The assumption of this study is that as people get older, due to a number of factors (e.g. decrease in bone mineral density, sedentary life, dietary reasons, etc.) they have an increased risk of falls, which has serious implications for their quality of life. Improving the physical capacity of older people through regular exercise programmes could significantly contribute to reduced risk of falls. In particular, Irez et al. (2011) investigated if participation in a Pilates programme improves the dynamic balance, flexibility, reaction time and strength balance, which are variables related to the reduction of falls. The study sample consisted of 90 female individuals of 65 years or over, who were distributed to an experimental group (Pilates exercise, n = 30) and a control group (n = 60). The experimental group participated in a 12-week programme, three times per week. Research findings indicated that improvements

were observed in the physical capacity of older women, which can be partly attributed to full attendance of the programme. Positive changes were exhibited regarding muscular strength, flexibility, dynamic balance and reaction time. Although the findings are very promising and the research design is sound, the fact that the sample of the study is not representative of the older population (it included only women living in residential homes) restricts the applicability of the findings.

Similarly, Cruz-Ferreira et al. (2011) studied the effects of a Pilates-based programme in healthy women between 25 and 55 years old. A total number of 80 women (n = 80) participated in this study, who were randomly assigned to two groups. The first group participated in a Pilates programme for a period of three months, while the second group attended the programme for a period of six months. The authors evaluated the impact of the Pilates Method in relation to life satisfaction, physical self-concept and perception of health status. The analysis of the data revealed that the Pilates Method is effective in improving life satisfaction, physical self-concept and perception of health status when it is practised for six months. The improvement in life satisfaction can also be attributed to the sense of group that was developed during the Pilates sessions, an emotional connection that was totally absent from the control group.

2.2.5.2 Effectiveness of Pilates on individuals with medical conditions

The impact of attending Pilates programmes has been investigated in a variety of medical conditions. Among the most studied research topics is the impact of Pilates on low back pain. Specifically, Curnow (2010) evaluated the effect of different Pilates programmes in mild low back pain. All the participants learned four basic exercises and they were then randomly allocated to three groups; the first received solely these four basic exercises, the second learned a relaxation posture using a spinal support, and the third had the training of the second group plus another postural exercise. The sample group was trained for six weeks and monitored for eight weeks. Analysis of the data revealed that all groups exhibited significant reduction in pain, in terms of duration, intensity and frequency. Moreover, since all participants experienced pain relief it is safe to assume that the postural and relaxation training (variables of Group 2 and 3) also had an impact on the reduction of pain. Therefore,

although the outcomes are very promising, it is not clear which variable is responsible for the improvement and thus further studies are necessary. The study by Lim et al. (2011) is a review of the studies concerning the effect of a Pilates-based programme in comparison with other types of interventions on pain and disability of individuals with low back pain. The authors only included randomised controlled trials in their review. Analysis of the data showed that Pilates-based programmes have been more effective in reducing pain in individuals with low back pain compared with minimal interventions. However, there were no significant changes between Pilates and other types of intervention. Furthermore, none of the interventions were more effective in reducing disability related to chronic back pain. A similar review was conducted by Pereira et al. (2011) who tried to evaluate the effectiveness of Pilates compared with lumbar stabilisation on the pain and functionality of patients with non-specific low back pain. Research evidence did not support the idea that Pilates is more effective than lumbar stabilisation for reducing pain in this type of patients. Instead it was revealed that these two methods are equally effective. A possible explanation for this finding might be the fact that these two methods use similar techniques/practices in the process of rehabilitation (e.g. motor re-education or strengthening of the core muscles). Sorosky, Stilp and Akuthota (2008) attempted to evaluate the effectiveness of yoga and Pilates in reducing pain and improving the overall performance in patients with chronic low back pain. The analysis of the data revealed that both interventions are beneficial for people suffering from chronic low back pain. In this case, as in other studies, the authors underline the necessity for overcoming the methodological problems of the previous studies in order to be able to generalise the findings to a larger group of people.

The impact of the Pilates Method on pain has been investigated by Korkmaz (2010), who examined the effectiveness of a Pilates rehabilitation programme on patients with fibromyalgia syndrome. The main symptoms of this rheumatological condition are chronic pain, hyperalgesia, depression, sleep disturbances, migraines and altered urination frequency. The female participants in this study (n = 25) attended a programme in the Pilates Method once a week for a period of three months, which included exercises on the mat, as well as some equipments (e.g. balls and springs). The specific goal of the study was to evaluate the influence of a Pilates programme on social physical concern (SPC: individuals' belief about how their physical appearance

is perceived by others), Body Mass Index (BMI), pain, depression and strength. Research findings showed that the participation in the Pilates programme had a positive impact on SPC. By the end of the programme improvements were observed in relation to pain and depression scores as well as to BMI and weight levels. There were no alterations in the strength variable, which can be attributed to the lack of specific exercises that can lead to an increase of back or handgrip strength.

Venugopal and Anbalagan's study (2013) investigated the impact of the Pilates Method and Yoga training on obese people. Obese people are vulnerable to many chronic organic conditions, such as hypertension, osteoarthritis and coronary heart disease. The authors attempted to examine the effectiveness of these exercise modalities on the blood pressure of obese individuals. The training programme had a duration of twelve weeks and participants were divided into four groups; one attended Pilates training, the second attended yoga training, the third attended a combination training of both Yoga and the Pilates Method and the last one was the control group. The results of this study indicated that all three experimental groups exhibited improvement after the training programme in relation to diastolic blood pressure. All the experimental groups were efficient in normalising systolic blood pressure. As a result, all of the three groups could stabilise their blood pressure. The group that received the combined training proved to be more efficient at improving their blood pressure (systolic and diastolic) than the groups of isolated Yoga or Pilates training.

Another interesting study was conducted by Johnson et al. (2013) who wanted to investigate the influence of a Pilates training programme on the ability to balance in elderly people with Parkinson's disease. One of the negative consequences of people suffering from Parkinson's disease is instability, which often leads to falls. The aim of this study was to evaluate the impact of a programme in the Pilates Method on postural stability, balance confidence and activities of daily living. In total, ten people (n=10) with Parkinson's disease participated in this training of six weeks. The results of this study indicated that Pilates training improved the balance and mobility of patients and enhanced their confidence in their ability to perform their daily activities. Furthermore, better performance was observed in terms of their walking speed.

The study by Keays et al. (2008) has a different scope from the previous studies, since it examined both the physical and the psychological impact of Pilates training in women with breast cancer. In particular, four women (n = 4) with a diagnosis of breast cancer of stage I to IV, who had underdone axillary dissection and radiation therapy, participated in this study. Participants were assessed in terms of exhibiting changes in ability of shoulder movement, pain, upper-extremity function and mood. The results from this study were not very promising. In particular, the most concrete finding was that none of the participants exhibited a negative consequence from attending this programme. However, the improvement in shoulder movement was very limited and the changes in mood, pain and upper-extremities movement did not allow researchers to reach any safe conclusions about the impact of Pilates training. One possible explanation for these findings is the limited duration of this training (12 weeks) or the frequency of the training sessions (once per week).

Finally, a large scale study investigated the influence of Yoga and Pilates training on body image and weight control behaviours (Neumark-Sztainer et al., 2011). The aim of this study was to investigate the connection between participation in Yoga or Pilates training and body dissatisfaction, unhealthy weight habits and binge-eating. In total 2287 young people participated in this study (women = 1257, men = 1030). The sample was representative of all races and social classes. Research findings revealed that a significant number of young people are attending Yoga or Pilates classes. One interesting finding is that the young people practising these modalities are not more protected from acquiring unhealthy eating behaviours in comparison with other young people that do not practice them. However, men who practised Yoga or Pilates trainings were at greater risk of exhibiting unhealthy weight control behaviours or binge eating.

The findings concerning the impact of the Pilates Method from the literature review are very inconclusive, although there is a positive aspect to them. The positive outcomes that are observed by the trainers or the participants in Pilates classes must also be confirmed by empirical studies in order to promote this method as an effective proactive or restorative alternative. Future studies need to focus on the development of better research designs, using larger and representative samples, control groups that will allow fruitful comparisons, randomised methods for the selection of the

participants and longer periods of follow-up to evaluate the long-term effectiveness of this specific method (Bernardo, 2007; Korkmaz, 2010; Segal et al., 2004; Sorosky, et al., 2008).

2.2.6 The Pilates method and performing arts

Until the 1980s the application of the Pilates Method was mostly restricted to the world of dance and sports as a method of connecting body and mind as well as a technique for restoring physical injuries (Latey, 2001; Ziegler, 2012). Nowadays, Pilates training constitutes a part of the curriculum of many performing arts such as acting, singing, dancing and music (Melton, 2001, p.1). This section will present both the applications of Pilates in these fields and the research findings concerning the effectiveness of this method. Again, the number of existing studies is extremely limited, thus the findings will be described as promising trends and not as conclusive data.

2.2.6.1 Pilates and Acting/ Singing

The Pilates Method can have two applications in the context of acting and singing: the one is related to voice production while the second is related to body conditioning. Melton (2001, pp.3-6) claims that a benefit of Pilates training for actors or singers is that they acquire a better understanding of their body's anatomy and physiology, which is essential for developing a correct posture and good balance. An additional gain which can result from the Pilates Method is vocal production. In particular, this modality can contribute to the connection between voice and body, which will enable both actors and singers to produce their voice with their whole body and achieve performances of better quality. The most significant component in voice production is breathing. However, the type of breathing that is suggested by the Pilates Method is controversial in relation to what singers or actors are taught during their studies. Specifically, Pilates is in favour of audible inhalation and exhalation, which is centred on the chest area. On the contrary, actors and singers are trained to have silent inhalation and exhalation, centred on the abdomen and lateral areas so that the torso is free to be used for other acting/singing requirements (e.g. imagination, action, etc). The change of focus concerning the breathing technique has implications for the

performance and confidence of the performers. However, there is a viable solution, which is based on mutual adaptations of both voice and Pilates classes on breathing, and can allow singers and actors to develop new skills as a result of their participation in this training (Melton, 2001, pp.5-8).

Body conditioning is another demand that can be placed upon actors when they need to play a role whose physical form is very different from their own. Actors may be asked to make extreme changes to their appearance ranging from changing their body proportions (gaining or losing weight) to altering their physical posture (e.g. performing a role of the opposite sex). The process of altering a body due to acting demands always follows certain steps: (i) body balance, (ii) posture correction, and (iii) body language. Therefore, the application of the Pilates Method for changing the physical structural appearance of an actor is devised and adjusted to individual needs (Reyneke, 2002, p.210, 211).

Unfortunately, the search for studies that evaluate the impact of Pilates on actors or singers yielded no results, thus the benefits from it must be treated with caution since there are no empirical findings to support them.

2.2.6.2 Pilates and Dance

The popularity of Pilates among the dance community can be explained by the theoretical and kinaesthetic commonalities that these two fields share. The basic principles of Pilates are also accepted in the dance field. In particular, centering (*sic*) is very important for dancers, since it contributes to correct posture and stability. Concentration is also a presupposition for performing the movements correctly and with good aesthetic result. Control is another concept that is essential for dancers because it determines the execution of movements and their stability and is related to prevention of injuries. Precision is related to the technical performance of dancers and is a feature that influences the duration of their career. Finally, flow of movement and proper breathing are directly related to the increased demands for motor perfection that are placed upon dancers' performance (Berkow, 2011, pp.1-4).

Dance and Pilates share some commonalities on an anatomical and kinaesthetic level (Berkow, 2011):

- Core stability and alignment: strengthening the core and correcting the position of the spine and pelvis, allows dancers to develop a better control of their movement and stability.
- Posture and shoulder-girdle: strengthening dancers' shoulder and chest muscles can help them acquire a good posture.
- Pilates stance and turnout: by learning to rotate the body from the hips, having the pelvis and spine correctly placed, the over-use and injuries of quadriceps are avoided.
- Symmetry: this is an important concept in dancing because it prevents discrepancies in the development of muscles in terms of strength or flexibility, which is related to performance and risk of injuries.
- Avoiding hyperextension: this is directly linked with the risk of injuries, especially when the body is hyperextended and elbows or knees are not aligned.
- Full body muscle engagement: the emphasis on alignment and understanding of the body, allows dancers to develop strength and flexibility.
- Injury rehabilitation: the basic principles of the Pilates Method (e.g. strengthening of core, alignment, communication of body and mind, etc.) function at the same time as the basic steps for the rehabilitation of injured parts of dancers.

The similarities between the Pilates Method and dance and the positive outcomes that result from participating in Pilates training (e.g. core stability, flexibility, balance, improvement of dance movements, etc.) can explain the increased acceptance of this modality in the dance field. Moreover, the positive impact of Pilates training is not only restricted to movement performance but expands to a proactive function of reducing the risk of injuries and increasing the duration of a professional dance career (Berkow, 2011).

In relation to research evidence, there is the review of Bernardo and Nagle (2006), who evaluated the impact of Pilates on dancers and gymnasts in five studies. The

outcomes of this review underline the lack of consistent findings due to methodological flaws. There is weak support for the effectiveness of Pilates training but more studies are necessary which will use randomised research designs, control groups, larger samples and more reliable scientific methods for evaluating the variables under investigation. On the other hand, the study of Wang et al. (2012) has resulted in more positive findings in relation to the contribution of the Pilates Method to muscle strengthening. The authors based their study on the fact that dancers need to have a strong muscular system in order to perform well and to avoid injuries. They specifically attempted to investigate the effect of an eight-week programme on the limited stability and abdominal muscle strength of young female dancers. Participants (n = 24) practised Pilates three times per week for a period of eight weeks in total; participants were assigned randomly either to the experimental group or to the control group. Research findings revealed that the Pilates Method caused positive changes in terms of limits of stability and abdominal strength. Moreover, the core muscles were strengthened and improvements were observed in the stability of the body movements and overall performance. The above-mentioned positive outcomes contributed not only to improved performance but also as a protective factor against injuries. The authors conclude that since the Pilates Method has such a positive impact on dancers, this modality must be incorporated in the curriculum of professional dance schools.

2.2.6.3 Pilates and Music

The application of Pilates in the music field is a recent phenomenon. The search of relevant literature revealed only two studies. The first study is an experiential evaluation of Pilates and Yoga training on the performance of a cello player (Garcia, 2011). The motive behind this study was to investigate whether Pilates can improve the author's own performance. The author argues that even from the first sessions he observed an increased productivity, less muscle tension and a better quality in his performance. Since this study is an observation of the changes that took place and is not based on reliable measurements, the conclusions will be treated with caution. Specifically, Garcia argues that the emphasis that Pilates put on the re-alignment of the spine helped him to develop more effective movements, which resulted in better instrumental performance. He also points out that the re-alignment of the spine improves musicians' posture and thus reduces lower back pain. The strengthening of

the core muscles contributed to improving his stamina and dealing with the high demands of live performance. Finally, the Pilates Method helped him to acquire a better coordination between his body, the instrument and the movement sequence which ultimately affects the performance.

The second available study investigates whether exercise methods have a positive impact on the trunk muscle endurance and to neuromuscular control (Kava et al., 2010). A secondary aim of the study was to evaluate if this positive impact determines instrumental performance. The necessity to strengthen the upper part of the body is related to the fact that instrumentalists often suffer from musculoskeletal injuries, which seriously affect their performance. In this study, the participants were assigned into two groups; one which attended Pilates training and another which attended a conventional trunk endurance programme. All participants attended a 13-week programme. Analysis of the data indicated that both forms of exercise were successful at increasing trunk muscle endurance and neuromuscular control, which improves instrumental performance to a considerable extent. Both forms of exercise contributed to a significant reduction in the frequency and intensity of pain in the upper part of the body. Participants reported better posture, less fatigue, better playing endurance and breath control.

In conclusion, although research on the Pilates Method is inadequate, the increasing popularity of the Pilates Method among performing artists suggests that it is at least worthy of more investigation. In addition to conducting more studies in this thematic area, it would be of great benefit to develop sound research designs, which will enable researchers to generalise the findings to the wider population of performing artists.

2.3 Yoga

Yoga is a holistic approach originating in India, which has been embraced by Western societies in recent decades. A large number of individuals practices Yoga, since they consider it beneficial for their health and well-being (Bonura, 2007, pp.10; Cope, 2000, pp.xi-xii). Yoga constitutes a form of mental and physical activity that is suitable for all, irrespective of their age, gender or physical abilities (Iyengar, 2008, pp.30-32). Musicians form a professional group that faces a number of stress factors, which adversely affect individual performance. Research findings revealed that Yoga is among the somatic modalities that can prevent or ameliorate the physical or psychological stressors experienced by musicians (Leska, 2010, pp.103-105; Stern et al., 2012, pp.28).

This section will attempt to enhance readers' understanding of Yoga through the presentation of its conceptual framework, its underlying philosophy and the transformations that have been observed as a result of the adjustment process. In addition, the techniques of Yoga will be discussed in the context of contemporary Yoga teaching and the impact that the practice of Yoga has on various activities, culminating into a review of the bibliography that examines the application of Yoga to musicians. A final and specific focus will be aimed at the relationship between Yoga and piano performance.

2.3.1 Defining Yoga

The review of the available existing texts on Yoga reveals that, at present, there does not exist a commonly agreed and accepted definition of Yoga, among people who are practising it or teaching about it at an academic level. Even the multiple existing definitions consist mainly of descriptions of the techniques that are being used by each respective tradition, schooling or practitioner, or, they consist of descriptions of the outcomes from their implementation. The absence of a unified context about the concept of Yoga results from the numerous meanings that are attributed to the Sanskrit root *yuj*, from which Yoga has originated (Kapsali, 2010, pp.26). The word Yoga has been used to denote the yoking of an animal, a constellation of planets or stars, a recipe, a union or the work of alchemists (White, 2011, pp.2-3).

For practical reasons, the existing definitions of Yoga can be classified into two categories; the first category will contain definitions of sages as they have been described in ancient/classical Yoga texts and the second group will consist of definitions developed after the growing popularity of Yoga in Western societies. In the context of ancient approaches, two descriptions of Yoga are the most characteristic. The first definition can be found in the ancient classical text of *Bhagavad Gita*, in which Sri Krishna describes Yoga as a means to a free mind and intellect and a self free from impulses and desires, so as to become one with God. Freedom from negative feelings, such as pain, sorrow or confusion can only bring personal fulfilment. Sri Krishna underlines that the process of controlling the mind is not easy, but it can be achieved through practice and freedom from desires (Iyengar, 1993). The second definition of Yoga is identified in another classical text named *The Yoga Sutras of Patañjali*. According to Patañjali, Yoga is the control of impulses and thoughts so that an individual's mind could be free from prejudice, pain or distress. Freedom of the mind can be achieved through three stages: (i) ethical practices, (ii) emotional and mental discipline (detachment), and (iii) effective quest of the soul (dedication to the Lord) (Iyengar, 2008, p.47). These two definitions share many commonalities, since the primary goal of Yoga is to free the mind from impulses and thoughts. Their only difference is that the second definition is more concrete on the necessary steps in order to achieve mind control.

In the late 19th century, Yoga gradually started influencing Western societies. One distinct difference between the ancient and the modern definitions of Yoga is the shift from achieving human salvation and concentration on God to self-realisation and meditation (White, 2011, pp.2). One of the first definitions reflecting the new ideology behind the practice of Yoga has been developed by Vivekananda (cited in Hunt, 2010, p.11). According to Vivekananda, Yoga refers to the union of the individual with the divine and uses different strategies to achieve it, such as postures, diet, breath control and concentration techniques. Iyengar (2008), one of the most influential teachers of modern Yoga, states that Yoga is related to the control of the mind and senses, in order to free them from negative feelings and thoughts and cultivate a sense of peace and tranquillity. Eliade (cited in Hunt, 2010, p.22) claims that Yoga is a process leading to self-development through ascetic techniques and

meditation. Quite similar is the definition of Werner (cited in Hunt, 2010, p.23) who considers Yoga as a method of training the mind and the personality of the individual to achieve the ultimate knowledge. Another interesting definition of Yoga has been presented by Payne and Usatine (2002, p.5) for whom Yoga is a method of stress management and of acquiring good health. They consider Yoga both as art and science; art because each individual chooses the way and the extent to which transformation will be accomplished and science because it is based on observations and theories about the interaction between mind and body, which are being acknowledged by the Western medical practice.

In the context of the present thesis, the history of Yoga throughout the centuries may provide a better understanding of the evolution of Yoga and the philosophy behind the theory. Appendix B.3 presents the history of Yoga in order to contextualise it within the modern ethos of somatic education and the newer somatic methods examined in this thesis.

2.3.2 Yoga theory and application

In general, it can be argued that the goal of Yoga is to bring unity between the mind and the intelligence of the universe, as well as within the self. It is a holistic approach, which views mind and body as an integrated entity. In this sense, Yoga is also a somatic discipline. The primary aim of Yoga is to help individuals to develop self-awareness and self-control, which eventually will lead them to inner peace and happiness (Bonura, 2007, pp.13-15).

The process to inner peace and freedom can be accomplished through eight steps or eight limbs, which have been formulated by Patañjali. The eight limbs reflect the behavioural and mental modifications that are needed towards the path of maturity and freedom (Iyengar, 2008, pp.52-53, Shearer, cited in Hunt, 2010, p.32). The eight steps are the following:

1. *yama* (socially accepted rules): contains behavioural guidelines related to non-violence, truthfulness, non-stealing, pure living and freedom from desire.

2. *niyama* (individual's moral values): it encompasses principles related to moral qualities, such as simplicity, contentment, austerity, study of the self and devotion to God.
3. *asana* (physical postures): are physical poses which contribute to the regeneration of the body's energy.
4. *pranayama* (breath control): refers to breathing techniques, which actually enable the mind to become calm.
5. *pratyahara* (withdrawal of the senses from the external world): when the senses can resist external objects, then the mind is free from the control of the senses.
6. *dharana* (concentration): refers to the integration of the mind, self, body, breathing and intellect. It is a cumulative process towards awareness.
7. *dhyana* (meditation): an individual can experience peace and quietness through the practice of prolonged meditation.
8. s*amadhi* (settled mind): it is the situation where self-awareness and intelligence are retained in a stable condition.

In the context of this thesis, the philosophy and practice of Yoga will be examined from the point of view of B.K.S. Iyengar, since his established style of Yoga and manner of delivery of Yoga teachings have had the strongest influence worldwide (De Michelis, 2008, pp.191-200). In addition, according to my personal experience, Iyengar Yoga as practised today in the West, places a clear emphasis on the individuality and idiosyncrasies of the students (rather than aiming at a mass teaching of inflexible dogmas), a principle which is in accordance with the line of teaching of most somatic methods and is also applicable to healthy music performance.

Specifically, Iyengar argues that Yoga is a tool that individuals can use for improving their lives (Kapsali, 2010, p.54). The practice of Yoga can bring balance between the mind and the body, which can eventually lead to self-realisation. This assumption is also in accordance with the humanitarian approaches of Maslow and Rogers, who claim that the ultimate goal of humans is to achieve self-actualisation, thus to develop themselves to their full potential (Heiden & Hersen, 1997, pp.59- 63). Iyengar (2008, p.36) states as the primary aim of Yoga the reinstatement of the mind in tranquillity

and balance and the freedom of the mind from perplexity and agony. He also gives equal importance to the aims of:

- conquering physical limitations
- attaining self-realisation
- balancing physical and mental state
- managing physical disease and emotional turmoil
- creating a dialogue between our outer and inner selves

At this point, it is essential to present the techniques that Yoga uses to enable individuals to achieve the goal of emancipation and inner peace. Modern Yoga tends to give emphasis only to some of the eight limbs of Patañjali's teachings, such as physical postures, breath control, concentration and meditation (Horrigan, 2004, p.67). According to Iyengar, the most important and primary tools of Yoga are asanas and pranayama, thus physical postures and control of breath. Asanas and pranayama could be very beneficial for the well-being of people since they can lead to positive physical, mental and psychological changes (Iyengar, 2008, pp.36-43). Iyengar tries to distinguish the concept of asanas from the modern use of the term meditation, by describing asanas as a method that bridges body, mind and the self, without losing contact with the reality, while the concept of modern meditation encompasses the feeling of being cut off from reality (Kapsali, 2010, p.56).

It has already been mentioned that, in the philosophy of Yoga, body and mind form a unified entity, thus asanas and pranayama contribute to the formation of a balance between them, although sometimes this is not very obvious. For example, at first glance physical postures seem to be related to the flexibility of the physical body. However, these postures are responsible for altering the chemical balance of the brain (e.g. secretion of endorphins), which improves people's cognitive and psychological functioning. Asanas are not solely physical postures and in order to be correctly performed it is required that all organs or body parts be in the right position, as well as to be achieved through full and constant awareness and intelligence (Iyengar, 2008, pp.40-41). The correct performance of an asana presupposes regular practice and that the individual is feeling comfortable in this physical posture, which is also supported by Patañjali (cited in Iyengar, 2008, p.40) in the Yoga Sutras "perfection in an asana

is achieved when the effort to perform it becomes effortless, and the infinite being within is reached".

Similarly, the complex breathing practice of pranayama (which literally refers to the distribution of energy into the physical body) apart from the physical benefits has a positive impact on a mental level. In particular, pranayama breathing is soft in order to assure that the facial muscles, basic organs and brain also become soft so that all the energy absorbed during the inhalation is distributed to every part of the body. In addition, exhalation has to be performed gradually for achieving the best utilisation of energy, removing toxins and acquiring psychological stability. Therefore, both asanas and pranayama equally contribute to the calming of mind and emotional stability, which are essential steps in the process of achieving self-realisation (Iyengar, 2008, p.36).

2.3.3 The impact of Yoga

Numerous books lay emphasis on a plethora of benefits that Yoga has on both a physiological and psychological level (Iyengar, 2008, pp.36-39; Lasater, 2003, p.2). Yoga could be used as a pro-active method to preserve a good level of health, but also as a restorative method since it can improve the clinical picture of many disorders. More specifically, Iyengar (2008, p.38) claims that Yoga could have an overall positive impact in developing or preserving a good level of fitness, as well as improving the symptoms of organic or psychological disorders. Breath control and physical postures, through stretches, bends, twists and inversions, can deal effectively with the negative consequences of the modern way of life and poor posture. On a physical level, Yoga contributes to an even distribution of energy to all body parts, increases the circulation of blood, balances metabolism and the secretion of hormones, tones muscles and joints and restores body strength (Iyengar, 2008, p.39). Cope (2000, p.xii) argues that the practice of Yoga is the best form of physical activity, since it has positive effects on the cardiovascular, reproductive, endocrine and nervous systems, but it also has no side effects for people who are practising it. All these positive changes on a physical level can minimise the symptoms of psychological disorders, such as anxiety, depression or aggression. Moreover, Yoga

can improve the symptoms of organic disorders, such as asthma, osteoarthritis, diabetes and high/low blood pressure (Iyengar, 2008, p.37).

A special focus has been given on the role of Yoga in minimising the negative effects of stress in people's daily lives. Stress is a normal physiological response of the body to a stimulus that is perceived as a threat. The perceived threat will activate a number of physiological reactions (e.g. muscle tension, heart rate, respiration rhythm, shutting down systems which are not of first priority, etc.), which are necessary for the survival of the organism. However, the experience of chronic stress as a result of the modern way of living has serious consequences for the quality of life (Fontana, 1996, pp.20-34; Lasater, 1995, p.4). The practice of Yoga can restrict the negative effects of stress (e.g. irritation, anger, frustration, etc) by releasing tension, slowing down the heart palpitations, soothing the organs and calming the brain (Iyengar, 2008; Lasater, 1995, p.7).

2.3.4 Empirical evidence on the effectiveness of Yoga

Assumptions about the positive impact of Yoga on the lives of individuals have been based on observations made by Yoga practitioners. However, the effectiveness of Yoga can only be affirmed through empirical evidence. Therefore, in the following paragraphs research outcomes concerning the effectiveness of Yoga will be presented.

One of the topics that has been frequently studied is the extent to which Yoga interventions are beneficial for patients with cancer. Cancer is a disease related to increased psychological distress and many physical symptoms too. Among the most frequently reported symptoms that burden patients with cancer are: pain, fatigue, increased anxiety and depression levels (Aranda et al., 2005, p.219). Some patients choose alternative medicine methods, such as Yoga, to manage more effectively the symptoms that they are experiencing. One study which examined the effectiveness of Yoga on cancer was that of Culos-Reed et al. (2005), who attempted to assess the psychological and physical benefits of Yoga. In particular, ten breast cancer survivors were enrolled in a seven-week Yoga intervention (Iyengar Yoga) and there was also a control group that did not participate in any intervention, so that comparisons could be made about the effectiveness of Yoga. Research findings revealed that there was a

positive impact on a psychological but not on a physical level. More specifically, positive changes were recorded for mood, stress and quality of life in general. A similar general goal is also shared by the study by Carson et al. (2007, pp.332, 337). The difference between these studies is that the latter has more specific goals, namely, to evaluate the effects of Yoga intervention on fatigue, distress, acceptance, relaxation, acceptance and invigoration. An eight-week Yoga intervention was applied to women with metastatic breast cancer. Research outcomes confirmed the positive impact of Yoga on enhancing the feeling of invigoration and a sense of acceptance of the disease. Patients who practised Yoga for longer periods of time (home-based practice, in addition to the group based programme) tended to experience less pain and greater invigoration than patients who solely practised during the duration of the actual group programme. In addition, significant findings concerning the impact of Yoga on cancer patients are seen in the review by Smith and Pukall (2009, p.473). In general, findings have been very positive; improvements related to sleeping habits, mood, stress and quality of life have been observed. Furthermore, patients experienced increased energy as a result of Yoga practice and greater acceptance of their disease.

Tul, Unruh and Dick (2011, pp.435, 440-442) explored the influence of Yoga on patients with chronic pain. An eight-week Yoga intervention (Hatha Yoga) was implemented on seven patients, which included group classes and home practice. Research findings confirmed the positive influence of Yoga on patients' lives. In particular, the vast majority of the patients reported that, through Yoga, they learned a new way of engaging with their body, which led them to greater levels of self-awareness and thus to feel that they could control to some degree the pain that they were experiencing. Moreover, patients learned to identify bodily cues before the pain actually occurs, so that they could employ pro-active measures. An additional gain that patients reported is the acceptance that pain will be a part of their lives.

Another interesting study is that of Vogler (2008, pp.31, 45, 99) who attempted to evaluate Yoga's influence on the holistic health of people over 55 years old who were physically inactive. All participants attended an eight-week Iyengar Yoga intervention. Research outcomes revealed a general positive influence on the health status of individuals. Specifically, improvements were reported in relation to muscle

strength, flexibility and self-perceived well-being in terms of emotional and physical status. However, due to the short duration of the programme, there were no significant improvements in relation to pulmonary function, blood pressure and immune function.

Sat's study (2011, pp.2, 4) is a review on the impact of Yoga interventions and meditation. An interesting finding, in addition to the benefits of Yoga for individuals' well-being, is its positive influence on cognitive abilities. In particular, the author underlines the fact that students who attended Yoga classes had higher academic performance than those who did not attend Yoga classes. The improvement in academic performance was attributed to the lower stress levels of these students. A similar finding was made in mentally handicapped population that participated in Yoga classes. These participants exhibited higher levels of motor coordination and developed better social skills.

Finally, Ross and Thomas's study (2010, p.9) is among the most valuable in this field because they are comparing the effectiveness of Yoga in relation to exercise and the effectiveness of different Yoga styles on physical health. Research outcomes suggested that Yoga is equally effective or in some cases better than exercise in improving physical health. Yoga has been equally effective with progressive relaxation in lowering blood pressure. A variety of Yoga styles have been assessed in relation to their effectiveness, such as Iyengar Yoga, Ashtanga Yoga, Power Yoga and Svaroopa Yoga. Despite their differences they have all incorporated the basic elements of Yoga practice, namely, physical postures, breath control and meditation. Research findings suggested that Ashtanga Yoga places a bigger burden upon human body in comparison with the other Yoga styles, since it is characterised by higher heart rate results than the other styles.

The philosophy of Yoga lays special emphasis on connecting body and mind, in order to establish an equilibrium which will enable individuals to achieve greater knowledge of themselves. Research studies support these theoretical principles by providing empirical evidence which confirms the positive impact of Yoga both on physical and psychological health. The practice of Yoga, even in short-term interventions, can reduce psychological symptoms, such as stress or depression;

empower individuals through a process of invigoration and enhanced self-awareness, as well as improve physical (e.g. muscle strength) or mental functioning (e.g. attention/concentration, creativity, etc.).

2.3.5 Yoga and Musicians: Experiential evidence

Although the primary goal of Yoga, connection of mind and body, has been constant and unchanging over the years, the motives for accomplishing this have significantly altered. The change in focus from human salvation to better quality of life, has led to equal changes not only in the way or style of practising Yoga but also in the number of people exposed to this specific philosophy and practice (Bonura, 2007, p.10, 12; White, 2011, p.2; Winding, 1982, p.3-4). Nowadays, Yoga can be applied to groups with specific characteristics in order to assist them to improve their physical or psychological well–being. In particular, De Michelis (2008) comments on the popularity of Iyengar Yoga and stresses the fact that Iyengar Yoga is "a unified system of practice which makes it potentially more adaptable to the requirements of other professional bodies, especially in the fitness and medical domains, whether alternative or conventional".

One of these groups that seem to benefit from participating in Yoga interventions is the group of musicians. The music profession is characterised as highly stressful because of its demanding nature. The irregular patterns of work engagements, meeting deadlines, travelling demands and financial insecurity are among the factors that are responsible for the high levels of stress that musicians experience (Khalsa et al., 2009, p.280; Winding, 1982, p.2). Nowadays, musicians are expected to be able to face even more challenges in comparison with the past. In particular, they need to acquire higher technical skills due to the extremely high level of instrumental and vocal virtuosity that is being developed and to perform a wider and ever growing repertoire, which presupposes constant practice, alertness and consumption of energy. This endless pursuit of performance perfection has a number of negative consequences for musicians (Leska, 2010, pp.1-2). One of these consequences is that, under these stressful circumstances of their professional lives, musicians increasingly lose satisfaction in performing. A second negative effect is that ceaseless practice, which often involves repetitive movements, leads to overuse of the same muscles.

Muscle overuse in its turn leads to injuries that impose periods of absence from work or, even worse, if persistent and frequent, lead to termination of careers (Khalsa et al., 2009, p.280; Leska, 2010, p.2). It is worth mentioning that even amateur musicians are experiencing high levels of stress and frustration due to the demands of practising (Winding, 1982, p.2). Another negative result of the constant artistic and professional pressure is that the adjustment reactions of musicians under demanding situations are gradually diminished, rendering them unable to offer their full potential to audiences (Leska, 2010, p.2). The unusual, uncompromised and unconstructive postures that musicians sometimes need to employ in order to perform in combination with the fact that most do not have knowledge about the functionality of their body, deteriorates musicians' quality of life (Leska, 2010, p.2).

Musicians have been actively seeking solutions to reduce the psychological and physical consequences that result from the constant pressure for high level performances. Medical treatments and alternative or complementary interventions have been implemented and evaluated. Medical treatments, although effective in treating the symptoms, are not usually chosen by musicians because of their side-effects. Drug treatments can cause perceptive deficiencies (e.g. hallucinations), or organic conditions (e.g. addiction, asthma, nausea, etc.), or even affect performance ability, since it has been observed that anti-anxiety drugs may disturb fine motor control (Birk, 2004, p.871; Sander, cited in Urbanski, 2012, p.5). As a result, a significant number of musicians have tried alternative or complementary interventions to overcome these difficulties.

Yoga is one of the methods that have been employed to help musicians with their physical or psychological symptoms, since it was an effective strategy for a number of mental, organic and psychological conditions. One of the first musicians who supported the healing and educative potentialities of Yoga was renowned violinist Yehudi Menuhin, who experienced muscular aches and was constantly fatigued from lack of sleep; he reports having an inability to relax and he was suffering from a variety of pains now known to be common to many musicians. While on tour in India (1952), Menuhin visited Yoga scholar and master Iyengar and worked with him on a series of physical postures and breathing practices. Very soon Menuhin had recovered from all his ailments. This encounter was decisive in exposing musicians

to the art of practising Yoga (Iyengar, 2008, p.12). Menuhin travelled with Iyengar to Switzerland and the UK and, ever since, the dissemination of Iyengar's teaching methods has been gradual, regular and non-stop.

Menuhin (cited in Leska, 2010, pp.3-4) reports that Yoga practice helped him to reduce tension, to be able to distribute energy effectively and acquire increased awareness of his body. Moreover, in the foreword to Iyengar's book "Light on Yoga" (1966, p.3-5) Menuhin recognises the benefits of Yoga from a musician's perspective: "The practice of Yoga induces a primary sense of measure and proportion. Reduced to our own body, our first instrument, we learn to play it, drawing from it maximum resonance and harmony". It is essential to underline at this point that in the context of this thesis, since it gives emphasis to somatic modalities and piano performance, the most seminal point in the history of Yoga for musicians will be 1952, when teacher and scholar B.K.S. Iyengar met, healed and taught maestro Yehudi Menuhin. This meeting marked the first official and recorded utilisation of a somatic method in the re-education of a top-rank musician.

In her instructional DVD, *Yoga for Musicians*, Roskell (2004) presents a series of exercises devised by herself and based on her experience as a concert pianist, piano pedagogue and Yoga practitioner. The DVD can be divided into two parts; the first part is a demonstration of combinational exercises invented by Roskell to suit musicians' difficulties such as injuries, tension and stress, and the second part is a demonstration of four original Yoga procedures that Roskell has chosen as being beneficial to musicians. The exercises proposed in the first part are aimed at movements of the arms, shoulders, hands, the spine and the legs. These are followed by instructions on sitting and standing postures, all aimed at instrumentalists and singers. Roskell's exercises are based on mobilising the joints in ways that musicians may not be used to, visualisations that add to a more profound kinaesthetic understanding of movements and synchronicity of breathing and movement. The second part contains a twenty minute daily programme of traditional Yoga postures preparatory to the next sequence which is a simplified version of the 'Salute to the Sun' traditional Yoga choreography. Roskell draws on her own experience and presents an original combination of movements that she attributes mainly to Yoga but

also to the Dalcroze method of eurhythmics and to the ancient Chinese esoteric martial art, Tai Chi.

Olson, author of *Musicians' Yoga* (2009), is a professional flautist who has also trained as a Yoga teacher in Kripalu Yoga. To date (2014), *Musicians' Yoga*, is the only comprehensive book which elaborates on the utilisation of Yoga techniques for the prevention of musicians' problems, the enhancement of performance practice and the treatment of practice and performance related problems. Olson encourages musicians to add a Yoga routine to their instrumental and vocal practice and performance. Olson's account is more detailed and demonstrates an understanding of Yoga which is more compatible to each aspect of a musician's routine. Therefore, she acknowledges and analyses musicians' needs into five categories: the psychology of music practice and performance; the aspect of awareness during music practice and performance; the mental preparation and practice before performance; the physical preparation appropriate to musicians; and aspects of posture and alignment. The integration of music with Yoga is promoted regularly throughout the book and emphasis is placed on awareness of every action, from learning the music to holding an instrument and performing for an audience.

2.3.6 Physical and psychological problems of musicians and the role of Yoga: Empirical evidence

A literature review of the most common problems that musicians are suffering from has revealed that the majority are suffering from stress-induced problems, such as performance anxiety or performance related musculoskeletal conditions. Performance anxiety is a condition which is related to three types of symptoms: (i) irrational negative thoughts, (ii) physiological arousal (e.g. palpitation, trembling, etc), and (iii) self-defeating behaviours (e.g. avoidance of performing in front of an audience), which cause severe distress to musicians. Recent studies estimate that more than 50% of musicians suffer at some point of their careers from performance anxiety (Fehm & Schmidt, 2006, pp.98-99). Specifically, it has been observed that musicians performing under pressure tend to perform worse than in normal conditions. Memory lapses and incorrect notes are the most frequent mistakes that are exhibited, which significantly affect the quality of their performance. The higher the pressure the more

errors that are exhibited and as a result performing musicians tend to develop performance anxiety (Wan & Huon, 2005, p.167). Performance-related musculoskeletal disorders are very common in musicians and include overuse problems, which negatively affect the upper part of the body, the back and the neck. These problems become chronic having a mean duration for rehabilitation from two to five years. The incidence of performance-related musculoskeletal problems ranges from 39-87% for adult players and 34-62% for college students of musical arts (Zaza, 1998, pp.1020, 1023).

Other symptoms resulting from increased pressure to perform are difficulties in breathing, finger tension and "dry mouth" condition. The absence of correct breathing can lead to performance difficulties, as well as physical problems. For example, breath is a significant component of the performance of all musicians, especially for wind instruments because it regulates the tone and sound stability. Moreover, problems in breathing, thus in the amount of oxygen intake, can result in hyperventilation or even passing out. The consequences of finger tension are quite evident in relation to performance but finger tension can lead to more serious or chronic physical problems (e.g. carpal tunnel syndrome, tennis elbow condition, etc.). "Dry mouth" syndrome hinders musicians' performance, especially in the case of wind instrumentalists or singers (Urbanski, 2012, pp.7).

Originally, it was suggested that Yoga practice could assist musicians to deal effectively with their specific stress-induced problems. Several arguments have been suggested to support these beliefs. One of them is related to the effectiveness of Yoga in the alleviation of stress symptoms and mood irregularities (Carson et al., 2007, p.337; Smith & Pukall, 2009, p.473). Furthermore, research outcomes underlined the positive impact of Yoga on musculoskeletal problems, such as improving the motor and sensory nerve conduction for carpal tunnel syndrome, reduction of perceived pain, improvements in grip strength. The most promising finding, apart from the above-mentioned improvements, was the maintenance of these improvements after the end of Yoga interventions (Raub, 2002, p.801; Sequeira, 1999, p.690; Williams et al., 2005, p.114).

Yoga practitioners believe that participating in Yoga classes could not only help musicians to prevent injuries resulting from the constant and exhausting repetitive movements, but could also have a positive influence on performance skills that are already impaired (Olson, 2009, p.ix). Research outcomes seem to support these beliefs to some extent. One of the first studies that examined the effects of Yoga interventions on musicians' problems was that of Khalsa and Cope (2006, pp. CR237, CR329) who attempted to evaluate the benefits of Yoga on performance anxiety. An eight-week intensive programme was implemented combining the theory and practice of Yoga. Kripalu Yoga was applied in this intervention, which is a style that is based on postures, multiple breathing and meditation, and gives special emphasis to deep breathing, internal physical sensations and individualised approach. The intervention included morning and evening sessions on a daily basis. In general, research findings confirmed moderate improvements for musicians who attended Yoga interventions in comparison with those who did not attend any intervention. Significantly higher improvements were exhibited only by musicians who gave solo performances. Moreover, all participants who attended a Yoga class perceived this knowledge as beneficial for them, especially the components of meditation, breathing and individualised counselling.

The original findings of the previous study motivated the authors to extend their study to more specific factors, as well as to a bigger number of participants. In particular, in the study of Khalsa et al. (2009, pp.286-287) the sample was triple in size (n = 30) in comparison with the first study and the style of Yoga applied was Kripalu. Participants attended an eight-week intervention which consisted of Yoga and meditation classes, applied on a daily basis, twice a day (mid-day and late afternoon). Research outcomes once more confirmed that participation in Yoga and meditation classes reduced performance anxiety and improved musicians' mood. Additionally, musicians evaluated Yoga positively, since this experiential knowledge improved not only their music performance, but also their everyday lives. Another interesting finding of this study was that Yoga was found to be effective in reducing cognitive and somatic symptoms of performance anxiety. Participants also perceived that breath control strategies were more effective than meditation or counselling. There was differentiation in performance anxiety in relation to gender, where females tended to exhibit higher scores.

Leska (2010, pp.103-105) examined the benefits of Yoga to violin playing, demonstrating that Yoga aids prevention and recovery from practice related injuries in musicians. Furthermore, she examines parallel benefits of Yoga, such as performance enhancement and psychological support in musicians who deal with performance anxiety and stress. Moreover, Leska suggests that through attendance at Yoga classes musicians can start experiencing satisfaction from their occupation anew and can start being more creative. Although this study has yielded some promising findings there are also some important limitations. Firstly, it is written in the form of a posture and exercise manual with specific applications to violin playing through the author's cross reference of existing manuals, textbooks and limited available research on the general effects of Yoga. Secondly, the majority of beneficial principles and techniques are made applicable to violinists through the author's personal experience and experimentation.

Similar goals are observed in Urbanski's study (2012, p.48), who attempted to evaluate the impact of three somatic methods on performance and anxiety levels. She subjected herself to the three techniques, before three performances. These techniques were: Hatha Yoga, Alexander Technique and Feldenkrais method. In each performance she was evaluating the impact of one somatic technique, where the subject was herself. There was one performance, the very first one which was used as a control group to evaluate her stress levels without the influence of any technique. Levels of stress were evaluated with the use of electromyography, which assessed muscle tension. The analysis of the results revealed that each of the three techniques was effective in reducing performance anxiety. The benefits that Urbanski observed as a result of the implementation of the somatic techniques have been reduced levels of tension during the performance and increased mental focus. However, Urbanski was unable to distinguish which method was more effective than the others, since this was a short term study.

Finally, a study by Stern et al. (2012, p. 28) also confirmed the positive influence of Yoga on musicians' stress levels. In particular, a nine-week intervention was applied on undergraduate and graduate music conservatory students (vocal majors and instrumentalists). All participants attended sixty-minute Yoga classes, twice per week

and had to practice at home for a short period of time on a daily basis. Research findings once more confirmed that Yoga classes were effective in reducing performance anxiety. In the context of this study there was a follow-up evaluation, where it was found that positive results had been maintained for a period of seven to fourteen months. Most of the participants have reported positive attitudes towards the intervention and its benefits.

In conclusion, research findings seem to confirm that Yoga classes are very beneficial for musicians as a facilitating somatic method in reducing performance stress and reducing the intensity of musculoskeletal problems. However, it is important to underline that, despite the promising results, these must be treated with caution for several reasons. In most of the studies the size of the sample is small, thus the generalisation of the finding to the whole population of musicians is not appropriate. In addition, there were methodological flaws in most of them, such as the lack of control group, the absence of randomised techniques for the participants' selection, the short duration of the intervention and the lack of follow-up. The above-mentioned factors impair the credibility of the research outcomes. Future research concerning the effectiveness of Yoga would benefit from conducting comparisons with other somatic methods, as well as between different styles of Yoga.

2.3.7 Yoga for Pianists

The specific subject of Yoga for pianists has only been explored by two authors so far: Kate Lanzer and GéNIA (trademarked logo). Lanzer is a pianist, piano pedagogue and Yoga practitioner who elaborates on her practice processes at the piano in parallel with her Yoga influences in an extended article of The American Music Teacher journal. GéNIA is also a pianist, improviser, piano pedagogue and Yoga practitioner who has devised and trademarked her own piano method (piano-*Yoga*®) in a ten week course of piano exercises.

It is easily observed that between the two authors there are differences in approach as well as in the utilisation of Yoga as a facilitator to piano performance. Lanzer (2009, p.26) seems to be motivated by the hindrances in pure music making and music expression, such as: artistic end-gaining, instrumental physical challenges, obstruction

of body awareness and, consequently, injuries and tensions. On the other hand, GéNIA (2009, p.13) states as challenges and motivations for her foray with a Yoga-inspired method the lack of existing piano exercises that are interesting, musical and easy, as well as her wish to create a method that will increase the width and competence of her hands.

These researchers pursue two diametrically opposed paths: the general and the specific path; one related more to creativity and satisfaction and the other to practical aspects and competences of piano performers. Lanzer reflects on her search for a correct way to play the piano. Specific obstacles, both physical and psychological, led her to the practice of Yoga through which she recognised that the resolution to her problems was in the expansion of understanding and awareness rather than the focus on the specifics of piano technique. On the other hand, GéNIA relates that the foundation to her method is Yoga, which has acted as catalyst to the creation of exercises that are "short and sweet, like little yogic exercises for the fingers".

Thus, in Lanzer, the technique of instruction is elaborated through experiencing a connection of breathing to self-awareness and of practising asanas to achieve interconnectedness of body, mind and breath. This awakening of the self leads Lanzer to a somatic understanding of piano playing, the results being "the most natural, effective and efficient movements." Yoga is endorsed as having an effect on teaching concepts; a teacher becomes a guide who encourages students to delve into themselves and bring to light the necessary tools for music expression. Lanzer ascertains that Yoga cannot "fix everything in one's playing" and she does not renounce existing methods of piano pedagogy and technique. However, she considers Yoga to be "a great tool for helping us learn from ourselves".

In GéNIA's method, the foundations of piano playing are laid through specific exercises away from the piano that give the opportunity for observation and understanding of the hands. These exercises develop strength, independence and stability and include some visualisation techniques. The hand is exercised in all its parts, with an emphasis on understanding the movement in all the finger joints with a focus on autonomy of the thumb and wrist. Before entering into the major part of piano exercises, GéNIA provides instruction on correct posture with an emphasis on

exercises for the feet, the abdominal muscles and the arms, and proceeds to introduce the two core principles of her technique: "engaged knuckles" and "flat fingers". The former refers to a distinct flexion at the metacarpal joints (the joints that allow movement between the fingers and the palm of the hand) and the latter refers to an active positioning of the fingers where none of the remaining joints (proximal interphalangeal and distal interphalangeal joints) is flexed thus producing the flat-finger effect. These two principles seem to be considered by GéNIA as the pons asinorum of every piano student.

In the main body of her work Lanzer juxtaposes one yogic step with each pianistic step. The first yogic step is self-learning and is accomplished through breathing techniques and physical poses in order to generate awareness of the physical and mental self. The first pianistic step is the development of exercises, which generate a similar awareness of the physical and mental self. This technique is elaborated by a series of instructions that include mindful practice of slow scales or other easy passages. Lanzer describes her personal practice routine facilitated by the application of Yoga skills to the observation of her finger, arm and whole body movements and the generating thinking that lies behind each of these movements. The next Yoga step that is examined is that of questioning oneself as to the existential purpose of actions. This questioning is then transferred to the artistic and pianistic purpose. Here the encouragement is on mental, aural and physical awareness. In Lanzer's approach, experimentation appears to be a central value and refers to the awareness of existing obstacles, such as symptoms of overall and localised tension, hurrying through the piece, ignoring the less active parts of the body and misplacing tension. Lanzer describes how Yoga skills bring awareness locally and generally to the body, awake aural perception to avoid mechanical rush, activate areas of the body not immediately related to pianistic movement and activate strength in the core muscles of the torso, which in turn liberates movement in the arms and hands.

The main body of GéNIA's method provides a series of piano exercises aimed at expansion of the palm and fingers. Stage one, Core Piano-Yoga®, is divided into part one for small hands and part two for large hands. Stage two, entitled Yin Piano-Yoga®, focuses on stretching the hand on the keyboard and stage three, Advanced Piano-Yoga®, prescribes challenging combinations of double intervals. Each part is

completed by a list of recommended repertoire relating to the technical challenges mastered in the part. In stage one, the music material is half broken 7th chord arpeggios (RH: 13-24-24-35, LH: 53-42-42-31) with a gradual increase in the stretch. Emphasis is placed on slow practice with minimum pressure and attentiveness to body sensations in order to avoid strains. In addition, visualisation advice is used for stability and contact with the keyboard. A constant reminder to keep the fingers flat and the knuckles engaged confirms the basic principles of this method. At the end of this stage special mention is given to the contribution of wrist movements in connection with tension-free and legato playing. The second part of the first stage is designed for large hands, therefore the intervals are larger but the configuration is similar. In stage two the close affinity to Yoga is mentioned, where "a slow stretching movement, led by a breath, is one of the main essentials". Flexibility and pliability is at the epicentre of this stage as is enjoyment of the process rather than anticipation of the outcomes. Visualisation is used as a tool to aid the finger span. The third stage is the most challenging technically, where the role of the wrists is given special credit for music making and for the creation of a continuous sound. A vivid rhythmic pattern is also characteristic of the double intervals in this stage.

The concluding ideas in both authors are also indicative of the different pedagogical orientations of their approaches. Lanzer reminds readers of the ultimate goal of Yoga, namely, the unity between mind and body; and she compares the goal of Yoga with that of music expression. In regard to technique she concludes: "in Yoga we learn to realise that mastery of motion is empty, just as pursuit of technical facility on our instruments is not our end goal. Mastering technique is simply the means to reaching our true goal of freely expressing our musical intentions". GéNIA concludes by encouraging readers to record their progress and to creating their own technical regime in the hope that her work will stand as inspiration for students' personal explorations.

The limited material available in the area of Yoga for pianists does not give a pluralistic or a realistic view of the potentialities of Yoga as the foundation for the creation of a pianistic approach. However, the opposing nature of the two existing documents allows readers to consider two possible and legitimate directions of education, the one more somatic, the other more pianistic. Perhaps this is fertile

ground for future research, where the two paths, the general and the specific, become one, or, continue further to more all-inclusive methods of piano performance and more specialised pianistic pedagogical manuals respectively.

A closer examination of the origins and developments of Yoga in this section revealed that it is one of the most ancient and complete somatic methods and its applications in medicine and the performing arts are multiple. In contrast with the Pilates Method which is only a century old, Yoga benefits from a millennia-old tradition of philosophical scriptures, psycho-physical disciplines and practical experimentations. As a consequence, it also demonstrates a richer range of applications than the Pilates Method. In the case of piano performance the available material is limited. However, the plurality and diversity of the various branches of this somatic method as well as the initial attempts to investigate its impact on piano performance suggest that there is fertile ground for further experimentation in the application of Yoga to piano performance.

2.4 Alexander Technique

Until recently the popularity of the Alexander Technique was mainly restricted to the performing arts, especially in the fields of dance and music (Dalumpines, 2011, p.1; Valentine & Williamon, 2003, p.145). However, in recent decades the popularity of this technique has expanded to the medical field, thus a larger number of people are familiar with its terminology (Reddy et al., 2011, p.1659).

The Alexander Technique is a method of somatic education which gives emphasis to the unity of thought and movement resulting in movement that is more functional, coordinated and less stressful to the body (Falvo, 2008, p.24; Jain et al., 2004, p.814; Sagiola, 2013, p.1). Several benefits can result from a naturally coordinated body including limited risk of muscular injuries, relief from physical pain, repetitive actions implemented with greater ease and an overall improvement in body and mind functioning (Brandes & Dans, 2007, p.31). These benefits are of special interest to musicians and pianists in particular.

This section aims to increase the knowledge and understanding of the Alexander Technique by presenting information about the theoretical background behind the technique as well as the recorded contributions of its applications to various fields with a specific reference to piano performance. An extensive review of personal testimonies as well as empirical data collected in a variety of scientific fields will support the claim that the Alexander Technique is an effective method of somatic education. As related to piano performance, the impact of the Alexander Technique will be examined as proposed by music scholars, pianists and piano pedagogues and Alexander Technique teachers. In addition, Appendix B.4 presents the historical and theoretical origins of the Alexander Technique as established by F. M. Alexander.

2.4.1 Defining the Alexander Technique

It is generally admitted that the theoretical description of the Alexander Technique is quite difficult, since as a method it is experiential. However, several authors have attempted to define this technique and their definitions can be classified in three groups for practical reasons (Santiago, 2004, p.63). The first group of definitions

consists of Alexander's description of his technique. The second group includes the definitions of his students, while the third group encompasses the definitions of the second generation teachers of the Alexander Technique.

2.4.1.1 Alexander's Description of his Technique

In describing the processes that occur during education in his technique, Alexander elaborates:

> In our work we are concerned primarily with non-doing in the fundamental sense of what we should *not do* in the use of ourselves in our daily activities; in other words, with preventing that habitual misuse of the psycho-physical mechanisms which renders these activities a constant source of harm to the organism. (Alexander, 1997 [1941], p. 603)

Elsewhere, Alexander describes his technique as a method of re-education or re-adjustment based on conscious guidance on the part of the teacher and conscious control on behalf of the student. Kinaesthetic awareness and strategies for involving the whole body are also essential in this procedure (Santiago, 2004, p.63; Wu, 2010, p.18). Although controversial, the term 're-education' refers to the progressive restoration of something that has been forgotten or lost over the years (Santiago, 2004, p.63). According to Alexander, children have an excellent 'use' of their bodies, which is lost as they get older and are involved in the socialisation procedures of their societies (Cranz, 2000, p.91). It has been contended that modern living with sedentary life-styles and dependence on machines contributed to the loss of correct 'use' of human bodies during the era of the Industrial Revolution (Rosenberg, 2008, p.34). The prefix 're' implies that this process is intentional. In other words, this technique does not offer new knowledge, but it gives instruction on how to deal effectively with previous habitual patterns of behaviour and change them (Jones, 1997, p.2).

According to Alexander "the aim of re-education on a general basis is to bring about at all times and for all purposes, not a series of correct positions or postures, but a *co-ordinated use of the mechanisms in general*" (1997 [1923], p.308). The process of re-education consists of three specific stages: (a) the inhibition of the habitual pattern of movement, (ii) the introduction of directions which will allow new and more natural

movement responses, such as moving the head up and forward, lengthening the spine and widening the back, and (iii) achieving the desired result, thus change (Doyle, 1984, p.89). A further characteristic of this technique is the relationship between students and teachers. Students are not necessarily passive: they can have a very active role in the process of re-education and in the prevention of body misuse (Santiago, 2004, p.65).

The aim of this technique is to correct and improve both mental processes and physical condition of individuals. This technique represents a holistic approach: body and mind cannot be divided or considered in terms of superiority/inferiority (Alcantara, 1997, pp.9-11). It is this impossibility of dividing the physical and mental aspects of the technique that make it somatic and have rendered it ideal for the present research.

According to Alexander, the verbal instructions and hands-on techniques are used to break down students' preconceptions and their habits of thought. Mental and physical reactions are so integrated that teachers need to "break down these preconceptions of mind by performing muscular acts for the student vicariously; that is to say, the instructor must move the parts in question while the subject attends to the inhibition of all muscular movements" (Alexander, 1997 [1918], pp.123, 124). However, according to some second and third generation teachers, verbal instructions and hands-on techniques are used to increase self-awareness, to inhibit the repetition of maladaptive habitual patterns and replace them with movements which are performed under conscious control (Jones, 1997, pp.2-3, 16-17; Langford, 1999, pp.7-9; Valentine et al., 1995, p.129).

Alexander developed his hands-on technique when he realised that his students, because of their misguided sensory awareness, were not able to comprehend his suggestions. According to Alcantara, there are three main reasons for the necessity of the hands-on technique: (i) the teacher needs to observe and identify students' movements and feelings, (ii) to prevent maladaptive patterns of movement from taking place, and (iii) to encourage correct movements. The teacher's touch can have a soothing effect on students, but the primary aim is not necessarily soothing. The touch aims at giving support and facilitating inhibition of stereotyped movements,

while directing towards new actions (Alcantara, 1997, pp.84-86). The primary objective of this technique is to educate individuals to focus on the nature of their movements.

2.4.1.2 Alexander's students' definitions of his technique (first generation students)

The basic characteristic in these definitions is the emphasis on each respective teacher's expertise, their understanding of the principles taught by F.M. Alexander and their adaptation of the principles and procedures as comprehended by them in order to be conveyed to the next generations of students.

Macdonald describes the Alexander Technique as a method of re-educating the sensory and motivating nerve systems, so that body awareness can be built and individuals can make an optimum use of the abilities of their bodies. Macdonald introduced the concept of 'natural rhythm' in his attempt to describe and teach the technique:

> It is the discovery of the natural rhythm within the human body which exists in the sensory and motivating nerve circuits. This essential rhythm has become distorted in most people, and such distortion becomes the principal cause of most of the ill-health and distress of many so-called mental and physical diseases. (Macdonald, 1989, p.xiii)

According to Carrington (cited in Santiago, 2004, p.63), the Alexander Technique can be perceived as a learning process with a mental and a physical component. The benefits of this approach are only observable if individuals take responsibility for their actions and actively try to change their maladaptive patterns of movements. Jones (cited in Santiago, 2004, p.64) describes the technique as the knowledge that individuals need to use themselves correctly in their daily activities. In interpreting phraseology established by Alexander, Jones provides a succinct definition of the technique:

> A method (a "means-whereby") for expanding consciousness to take in inhibition as well as excitation ("not-doing" as well as "doing") and thus obtain a better integration of the reflex and voluntary elements in a response pattern. The procedure makes any movement or activity smoother and easier (Jones, 1997, p.2).

Finally, Barlow views the Alexander Technique as the manner in which teachers can demonstrate to their students effective ways of using their bodies through a psycho-physical principle (Barlow, 2001, p.13).

2.4.1.3 Second generation teachers

The distinctive pattern of this group of definitions is the acknowledgement of interconnection between the Alexander Technique and other scientific fields. Expressing the most somatic view of second generation teachers, educator, performing artist and doctor of chiropractic, Weed defines the Alexander Technique as "the study of thinking in relation to movement in order to develop the mental disciplines necessary to realise all of your potential" (Weed, 2012, p.38). He, thus, expresses a view that is more focused on the pursuit of the development of cognitive skills than most second generation teachers.

John Nicholls (cited in Santiago, 2004, p.65) describes the Alexander Technique as a method reflecting interactions with performing arts, orthopaedics, education and psychotherapy. The primary aim, according to Nicholls, is to increase body awareness giving emphasis to posture, control of muscle tension, balance, mental processes and emotions. The impact of this technique can be identified at both psychological and physical levels.

According to Carolyn Nicholls (2008, p.13) the Alexander Technique is directly linked with balance in a sense that allows individuals to experiment with this concept. The lack of balance will result in a distorted way of movement, which could eventually lead to chronic pain or other organic conditions. Emphasis is also placed on kinaesthetic awareness as a guide to the adoption of correct movement patterns. Similarly, Conable (1995, p.1) defines the Alexander Technique as a practical approach for improving movement, balance, flexibility and coordination. The application of this method can result in improvement in performance, which also explains the reasons for being included in performing arts curricula. Conable argues that this technique enhances kinaesthetic awareness, thus enabling individuals to gain full control of their own minds and bodies.

2.4.2 The theoretical concepts of the Alexander Technique

It is most commonly held that the Alexander Technique is a re-education method of restoring the balance between body and mind. The practical application of the Alexander Technique is based on specific concepts that Alexander discovered experientially, as he was trying to solve his voice problems. These concepts are not solely found in Alexander's texts, since they are common features of many somatic methods. However, Alexander was the first who structured them into a concrete and unique body of knowledge (Matthews, 2011, p.1; Santiago, 2004, p.71; Wu, 2010, p.18). Alexander's methodology is based upon eight main concepts: psycho-physical unity, use and functioning, primary control, sensory awareness, inhibition, direction, ends and means and conscious control. In comparison to the Pilates Method and Yoga, these concepts place the Alexander Technique very close to the core of somatic education.

2.4.2.1 Psycho-physical unity

This concept refers to the recognition of interconnection between body and mind and the unfeasibility of dividing physical and mental faculties in the conception of the function of the individual (Alexander, 1997 [1923], p.228 fn). As a result, it is claimed that human movements can be understood and controlled only if emotional, cognitive and physical procedures are taken under consideration (Matthews, 2011, p.1; Santiago, 2004, pp.71-72). This idea is based on the recognition that, although the human body consists of different parts, each part is connected with all the others and each part reflects the whole body (Alcantara, 1997, p.12).

2.4.2.2 Use and functioning

The Alexander Technique is a method that refers to the way individuals are using themselves. The term 'self', as Alexander uses it, refers to the soma, i.e. the whole of the psycho-physical mechanism that comprises the human being (Alexander, 1997 [1941], p.516). Problems arise when people 'misuse' themselves, as when they give emphasis solely to the goal that they wish to achieve (Wu, 2010, p.19). In the context of the Alexander Technique the term 'use' refers to the manner in which the psycho-physical organism is employed generally during activity (Alexander, 1997 [1932], p.410 fn). Some commentators have claimed that this 'use' of the self can be deeply influenced by cultural features, such as family, school or technological developments (Cranz, 2000, p.91).

It has been demonstrated repeatedly in the Alexander Technique that if individuals change the way they use themselves at a general level, it is likely that improvements will be observed in specific psychological and physical functioning. The correct use of the self will contribute to the achievement of balance, coordination and control of the movements that people employ in their daily activities. However, the correct use of the self in this context is based on individuals taking full responsibility for stopping the repetition of bad habitual patterns of movement (Santiago, 2004, pp.73-74).

2.4.2.3 Primary control

The term 'primary control' refers to the effect that can be caused by changes in the relationship between head, neck and trunk, which Alexander discovered to be conducive to ease and quality in performance when applied to all of his activities (Alexander, 1997 [1932], p.416). It is an innate mechanism for balance and coordination, which contributes to the flow of movement (Conable, 1995, p.1). This mechanism is of primary interest, since its natural function is to influence the quality of functioning of the whole body. The rest of the peripheral movements (e.g. movements of the fingers or arms) are then performed in harmony with the head-neck-trunk relationships. It is important to underline at this point that the functioning of the head, neck and trunk in any particular manner does not mean a right position,

since some teachers claim that the right position alters according to the specific circumstances (Vineyard, 2007, p.11; Wu, 2010, pp.20-21). However, interference with the functioning of this relationship can lead to lower levels of performance and vulnerability to illnesses (Santiago, 2004, pp.72-73). One of the strategies used to improve the primary control is a hands-on methodology, where the teacher identifies objectively the movement patterns of students and helps them to re-adjust them (Jain, Janssen, DeCelle, 2004, p.815). According to Alcantara (1997, pp.26-31) the primary control has four main features:

(i) It is innate: people are born with it, they do not learn it. However, people learn how to use primary control, which could be a correct or mistaken way to use it. A correct use of primary control is reflected in the following sequence of movements where the head leads and the body follows, which is observable not only in animals but in humans too. In particular, children employ a correct use of primary control, allowing them to start movements with their heads, when at the same time their back is lengthened and widened (Cranz, 2000, p.92).

(ii) It requires a holistic approach: primary control presupposes the interaction between body and mind in order to be performed correctly.

(iii) The main focus is the position of the head: this concept refers to the continuous process of changing the relationship of the head to the neck and the trunk.

(iv) It demands an attitude of non-doing: the correct use of primary control is not about performing the right movements, but not allowing the wrong movements to happen again.

2.4.2.4 Sensory appreciation

According to Alexander, sensory appreciation has two primary functions: first in its most limited sense, it is responsible for all sensory experiences, but secondly and more importantly, in the human being, it serves as a kind of controlling mechanism. As such, it is a "psycho-physical process by means of which an almost unlimited use of the different units which make up the whole may be brought about" (Alexander, 1997 [1923], pp.243-4).

Information coming from the senses is valuable because it allows suitable responses towards the perceived stimuli. In cases when sensory awareness is not correct, as is a common complaint, it is highly probable that people will exhibit inappropriate ways of responding to stimuli (Santiago, 2004, pp.80-81).

Several factors can explain the incorrect functioning of the senses. One of them is the familiarity of a stimulus: the brain tends to register new stimuli, which results in overlooking the old and familiar. Another reason is the decay of the reliability and accuracy of the senses due to over-use or under-use. Thirdly, senses may not work effectively as a result of an accident or illness. A final factor which can explain a faulty sensory awareness is the misuse of the self.

The solution for improving sensory awareness is to allow individuals to experience the good use of the body and compare it with their 'usual' use of it, thus to enable them to reject their maladaptive movement patterns (Alcantara, 1997, p.42).

2.4.2.5 Inhibition

In the context of the Alexander Technique, inhibition refers to "the act of refusing to respond to the primary desire to gain an end" (Alexander, 1997 [1941], p.590). Unfortunately, nowadays it is more often seen as merely a postponement of automatic, stereotypical reactions. According to Alexander, the more complete procedure he advocated increases the possibility of correct use and functioning of the human body. Inhibition is not easy to achieve. It takes time and demands active involvement of individuals in order to self-observe their functioning and prevent the misuse of themselves (Matthews, 2011, p.3; Santiago, 2004, pp.74-75).

2.4.2.6 Direction

Direction refers to the messages or 'orders' that individuals project to themselves both before and during activities so that they can have a positive influence on the quality of the result they would like to achieve. These internal guidelines can be either verbal or mental representations (e.g. a mental picture or map of the desirable result) (Kodish, 2001, p.362). The process of direction can be facilitated by a number of preventive

orders developed by Alexander, such as "Let the neck be free" or "Let the back lengthen and widen" (Matthews, 2011, p.4; Wu, 2010, pp.24-25).

2.4.2.7 Ends and means

According to Alexander, one of the most important factors that leads to misuse of the self is the widespread habit of 'end-gaining'. End-gaining is the situation where individuals put all their efforts to accomplish their goal directly without consideration of the most effective way of reaching their goals. This pattern of behaviour is so common that many people do not realise that they are trapped in it and misuse themselves because of it.

In contrast to this approach to activity, there is the 'means-whereby' process, which refers to the use of the most appropriate means to achieve one's goals. Jones (cited in Alcantara, 1997, p.20) describes the 'means-whereby' process as a number of steps that need to be taken for achieving a goal. Others claim that this process includes three important components: the ability to stop and think about the correct movements rather than adopting the habitual patterns, self-awareness on how individuals are using themselves, and the choice of a means, whereby a goal will be achieved in the most appropriate way (Alcantara, 1997, pp.18-21; Matthews, 2011, p.4).

2.4.2.8 Conscious control

Alexander describes conscious control as "the result of the use of the reasoning powers in the conduct of life, by means of which man may fight his abnormal desires for harmful sensory experiences" (Alexander, 1997 [1918], p.47). This specific approach is applied as a means for individuals to develop the necessary skills to use the self correctly. It is based, in part, on the idea that individuals must take responsibility of their actions and not blame external factors for the misuse of themselves. Only in this context can people make choices and acquire a better quality of life, through conscious control of the self (Matthews, 2011, p.4).

2.4.3 Impact of the Alexander Technique

The Alexander Technique has been described as a re-education method of inhibiting maladaptive patterns of movement and replacing them with natural movements, which helps the self to be coordinated and balanced. Although this technique is best known for its capacity to teach more natural and more effective ways of functioning, most of the time there are also parallel positive changes at physical and psychological levels. The benefits from the application of the Alexander technique have been classified as: (i) physical, (ii) psychological, and (iii) psychomotor (Dalumpines, 2011, p.1; Doyle, 1984, pp.96-98).

(i) *Physical benefits*: Individuals can learn how to reduce tension, as a result of the acquisition of a more coordinated way of movement. They can learn new ways of moving which do not create additional stress to the body and individuals can acquire new skills in responding to emotional, cognitive and physical situations. The acknowledgement of harmful behavioural patterns can lead to better posture: reduced risk for organic situations (e.g. cramps, hypertension, rheumatic disorders, etc.) and to a performance standard closer to the optimum level of the individual's functioning (Nicholls, 2003, pp.7-8).

(ii) *Psychological benefits*: Increased self-awareness can allow individuals to choose their reaction to events, which might reduce the levels of stress experienced, and consequently the risk for cardio-vascular diseases (Doyle, 1984, pp.96-98).

(iii) *Psychomotor benefits*: The inhibition of maladaptive patterns and an increase in controlled decision-making can result in better psychomotor coordination, increased motivation in action and less muscular tension (Brennan, 2004, p.17).

Alexander makes a strong claim that a benefit which stands apart from the evidence-based benefits mentioned above is the general fulfilment, the designing of one's life and the reaching of one's full potentials (Alexander, 1997 [1923], pp.381-383, 387). Weed propounds that claim and argues that this was the ultimate benefit that Alexander sought through his work (Weed 2012, p.42).

2.4.4 Empirical evidence on the effectiveness of the Alexander Technique

The review of the existing literature concerning the impact of the Alexander Technique reveals that researchers have been interested in investigating three thematic areas: posture/balance disabilities, chronic low-back pain and pulmonary difficulties. Although there are methodological issues in the research design of some of these studies most of them yielded very promising results.

2.4.4.1 Alexander Technique and chronic pain

Chronic low back pain is an area of interest not only for the medical field, but also for somatic methodologies including the Alexander Technique. One of the reasons that motivate scientists to investigate this topic is its high prevalence among patients visiting primary care facilities. Back pain is the most frequent factor leading to disability in western societies because of the sedentary life-styles. Another reason is the fact that none of the existing interventions, medical or alternative, has positive and lasting benefits for the majority of the population suffering from back pain (Little et al., 2008, pp.1, 2, 5).

Little et al. (2008) were among the first researchers to investigate the impact of the Alexander Technique on patients with low back pain. The aim of their study was to compare the impact of the Alexander Technique, massage therapy and advice for taking exercise on individuals suffering from chronic or recurrent low back pain. Participants in the study (n = 579) were divided randomly in four groups; the first group (n = 144) were assigned to normal care with prescription for aerobic exercises, the second group (n = 147) received massage therapy, the third group (n = 144) attended six lessons in the Alexander Technique and the last group attended twenty four lessons in the Alexander technique. The outcomes of the study revealed that the groups that attended six lessons in the Alexander Technique or who were prescribed aerobic exercises had longer lasting benefits in comparison with the group that received massage therapy. The positive results of massage therapy were maintained only for a short period of time. There were no differences in the effectiveness of the Alexander Technique between participation for six and twenty-four sessions. The

authors concluded that the Alexander Technique has a positive effect on pain and functioning of individuals suffering from chronic or recurrent back pain, an effect which was maintained after twelve months from the end of the intervention.

McClean & Wye (2012, pp.4, 9, 32-33, 42-43, 48-56) conducted another interesting study, aiming to explore not only the impact of the Alexander Technique but also its acceptability to the clinic patients and the perceived benefits according to their own judgements. This study was conducted at a hospital outpatient Pain Management Clinic and lasted approximately eleven months. The sample of the study consisted of forty-three patients with chronic or recurrent pain, who attended one-to-one lessons in the Alexander Technique for six weeks. The majority of the sample (75%) suffered from low back pain, and 43% of them did not respond to any conventional treatment and showed no signs of improvement. The results of this study revealed that more than half of the participants experienced lower pain levels, which led them to reduce the medication they were using. Among the people who benefited most from the Alexander Technique were those who were committed to making it part of their everyday life and exhibited the greatest reduction in pain medication intake. Furthermore, the Alexander Technique was highly accepted by all the participants in the study. Many of them described this technique as very enjoyable. Even participants who did not experience significant reduction in the levels of pain reported to have discovered new ways of coping with and managing pain. Among the positive features that contributed to the acceptance of this specific technique were the one-to-one sessions, which participants considered essential for developing self-management skills. Overall, the findings of this study suggested that the Alexander Technique can be of benefit to people suffering from chronic pain, which could also be valuable for the health system since it reduces the costs of medications, specialised examinations/tests and consultations with doctors.

Woodman & Moore (2012, pp.5, 19-20) conducted a review to assess the existing findings on the impact and safety of the Alexander Technique on medical conditions. In particular, the authors reviewed 18 studies, most of which, unfortunately, were not based upon controlled randomised designs, a factor that hinders the generalisation of the findings. The outcomes of this review revealed strong evidence for the positive impact of the Alexander Technique on chronic back pain that was maintained in the

long term. Specifically, the long term effects of this technique were directly linked with the educational scope of it. The authors underline the necessity for more studies that will be based on larger samples and controlled research designs in order to reach reliable findings.

2.4.4.2 Alexander Technique and posture/balance

It has been shown that excessive strain placed upon the neuro-muscular systems has negative effects on postural support, balance and coordination (Williamson, Roberts & Moorhouse, 2007, p.369). Several authors attempted to explore whether the Alexander Technique can be effective in improving balance and posture. In particular, Dennis (1999, pp.M8, M10) examined the relationship between functional reach and lessons in the Alexander Technique. Functional reach is a clinical concept referring to balance. The sample of the study consisted of women over 65 years old, which was divided in three groups: one pilot, one experimental and one control group consisting of one male participant. All groups were evaluated before and after the intervention in relation to functional reach. The first two groups received lessons in the Alexander Technique twice per week for eight weeks, while the control group was not exposed to any intervention. Research findings suggested that the Alexander Technique was successful in improving balance and thus reducing the possibility of falls in older women. Group one and group two showed significant improvement in relation to functional reach performance. However, group two did not maintain the improvements when it was evaluated again in the follow-up one month later.

Stallibrass & Chalmers (2002, pp.696, 705) explored the complementary role of the Alexander Technique in pharmacological treatment of patients with Parkinson's disease. Specifically, the researchers were interested in investigating the impact of this technique in reducing motor and postural disability of patients with this degenerative disorder of the central nervous system. The sample of the study consisted of individuals diagnosed with idiopathic Parkinson's disease (n = 90), who were randomly assigned in 3 groups of 30 people: one group attended 24 lessons in the Alexander Technique, another group received 24 sessions in massage therapy, and a third group (control group) did not receive any additional treatment. The outcomes of the study underlined that even a small number of lessons in the Alexander

Technique was effective in improving the life of patients with Parkinson's disease. A possible explanation of this finding is that the Alexander Technique enabled patients to acquire skills which could be applied in their daily activities. Among the participants, those who benefited the most were patients who were moderately mobile, with no signs of dementia and with increased interest in the Alexander Technique. Additionally, in this study there were also indications that the Alexander Technique could be beneficial for facial expressions, management of tremor and speech.

Similar research was conducted by Cacciatore et al. (2010, pp.3, 11-14) who examined the effects of the Alexander Technique on the postural tone of teachers, as well as the impact of short-term Alexander Technique lessons on the axial tone of people suffering from low back pain. Postural tone is the subconscious tonic activation of skeletal muscles in order to maintain the position of body segments and to prevent the body from falling down. Subjects of the study (n = 37) were divided in three groups; the first group consisted of teachers of the Alexander Technique, the second group was the control group, and the third group consisted of people suffering from low back pain. The results of this study supported the impact of the Alexander Technique. In particular, Alexander Technique teachers who had long experience in this method, as well as people who had attended short term courses on this technique exhibited decreased levels of axial stiffness. However, the group of teachers showed greater reduction in comparison with individuals who suffered from low back pain.

2.4.4.3 Alexander Technique and respiratory capacity

Despite the fact that research findings on the effectiveness of the Alexander Technique on respiratory function are very promising, this thematic area has not been thoroughly studied. Specifically, the study of Austin & Ausubel (1992, pp.1, 2) appears to be the only research attempt to evaluate the influence of the Alexander technique on pulmonary function.

The participants of this study were 10 healthy volunteers, who attended 20 weekly sessions of 35-45 minutes. Research design also included a control group (n = 10). Findings confirmed the hypothesis that the Alexander Technique improved the

strength and endurance of respiratory muscles. The authors postulated that the increased pulmonary function could be the result of four factors directly linked with the Alexander Technique: (i) increased length of muscles of the torso, (ii) enhanced strength of abdominal muscles, (iii) decreased tension at the chest wall muscles, and (iv) better coordination of respiratory muscles.

2.4.5 Alexander Technique and the medical field

According to Jain et al., the Alexander Technique is a method of re-educating individuals to inhibit and replace maladaptive patterns of behaviour with more natural ones, so that the whole self will function more effectively (Jain, et al., 2004, p.814). However, there are many cases where individuals, especially from the performing arts, start to attend lessons in the Alexander Technique for treating conditions such as lordosis, tendonitis, carpal tunnel syndrome and performance anxiety. Their primary aim is to reduce the feelings of discomfort or pain that they are experiencing, particularly while performing. Many of them, after completing a number of classes on Alexander technique, report total absence of the symptoms from the supposed 'organic condition' that led them to seek alternative methods of treatment in the first place. Therefore, it can be suggested that although the primary aim of the Alexander Technique is to teach people more effective ways of improving their own conditions, it also has had the effect of creating indirect therapeutic 'results' or of leading people to adopt preventive strategies as a result of increased self-awareness and co-ordination in the whole self. It is necessary to underline that this technique is not a therapy and it is not a panacea for all organic conditions. It would be naïve to expect that the Alexander Technique could heal cancer or dementia, although it could possibly reduce the levels of pain that patients are experiencing or improve any attendant disabilities that result from these conditions. In other words, it can assist with quality of life in the face of such diseases. Research nonetheless suggests that the medical field and the Alexander Technique are not mutually exclusive; instead, they have complementary roles (Alcantara, 1997, pp.277-278).

The application of the Alexander Technique in the medical field can be observed from the fact that medical researchers explore its impact on medical conditions, especially those affecting doctors and medical staff. One characteristic example of this

acceptance, which also led to very promising results, is the study of Reddy et al. (2011, pp.1659, 1661-1662). The authors attempted to investigate whether the Alexander Technique can improve the posture of surgeons during minimal invasive surgery. This kind of procedure is very demanding for the surgeons and their teams, often leading to overuse syndromes, surgical fatigue syndrome or deterioration of visual acuity. In the context of this study participants (n = 7) attended 2 group sessions and 6 individual sessions of 45 minutes each in the Alexander Technique. Participants also had to practice in their own free time for 15-20 minutes on a daily basis. Research findings revealed that surgeons exhibited improved proficiency during minimal invasive surgery and better posture.

2.4.6 Alexander Technique and the Performing Arts

Alexander Technique is among the most popular methods employed by teachers and students in the performing arts area. The significance of this method for the performing arts is evident from its inclusion in many of the curricula of significant training institutions (Brennan, 2004, pp.66-67; Dalumpines, 2011, p.1) including private and group lessons offered to students at Birmingham Conservatoire. The primary objective of this section is to enhance the understanding of the relationship between the Alexander Technique and the performing arts. The application of the Alexander Technique will be presented in the fields of acting, dancing and music.

Naturally, given its origins, the Alexander Technique is considered an important component of an acting curriculum because it allows actors to coordinate their bodies and get in touch with their feelings. In particular, the Alexander Technique helps actors to acknowledge patterns of behaviour that inhibit their performance and provides them with means to change them. This technique can improve acting in terms of performance and vocal quality. The maladaptive patterns that are commonly observed in actors are excessive muscle tension, shortening the body, and a generalised compression that affects the movements of the rib cage and the diaphragm and as a result also affects breathing and voice quality. The Alexander Technique helps actors to identify these maladaptive patterns that influence their performance, teaches them strategies on how to stop repeating them and how to direct themselves in more natural movements (Sagiola, 2013, p.1).

Dancing is an artistic means of expression that is based on complex movements and muscular coordination. The refinement of the precision of their movements is the primary goal of dancers; so, this can also lead them to misuse of their bodies and sometimes permanently affect their performance standards (Batson, 2012, p.1). The Alexander Technique can assist dancers to develop a more coordinated use of their bodies and avoid unnecessary injuries resulting from overuse.

The classic form of the Alexander Technique cannot always be implemented in dance classes, since there are several differences between the two disciplines. The Alexander Technique puts emphasis on the Alexandrian concept of 'non-doing', while dance training is based on 'doing'. Another difference between the two disciplines is that the Alexander Technique allows individuals to learn 'how not to repeat old habits', while in dance the concept of elimination of 'fixing' in particular ways is of great significance. Finally, The Alexander Technique suggests that people pay attention to the process of achieving a goal, while dancers focus solely on the result (Nettl-Fiol, 2006, pp.78-79). Despite all these differences, the Alexander Technique can significantly improve the performance of dancers by teaching them to move with greater ease and poise (Batson, 2007, pp.48,51).

Musicians can also experience the beneficial influence of the Alexander Technique, since it can have a positive impact on their performance and reduce performance anxiety. Falvo (2008, p.24) suggests that the Alexander Technique can improve the virtuosity of instrumentalists. Virtuosity refers to the ability of the musician to reach high levels of detailed neuromuscular coordination while moving with balance and expressive ease. This ability can be acquired when musicians are fully aware of the situation they are in (i.e. body awareness, awareness of other instrumentalists, the size of the hall, etc.) and when they are not concentrated only on producing the right notes.

Performance anxiety is an awkward feeling that is experienced by people in general but it can have negative consequences for the performance of musicians and dancers. It can be described as the fear of experiencing the sensations which are related to nervousness such as unstable breathing, accelerated heart rate, shaking limbs and negative self-defeating thoughts. The Alexander Technique can assist musicians to

experience and understand all these sensations and by doing so it can contribute to the reduction of stress levels, better performance and increased satisfaction from engaging in the production of music (Roig-Francoli, 2010, p.2).

The application of the Alexander Technique can have beneficial effects both for instrumentalists and singers, since it helps them be aware of their habitual patterns that affect their performance and offers them knowledge on the interconnection between head, neck and torso (e.g. tension in the neck will produce tension in the throat) (Conable, 1995, pp.132-140).

Brandes & Dans (2007, pp.2-4) discuss the benefits of the Alexander Technique in two areas: in relation to musicians and in relation to music teachers. In relation to musicians, they underline the positive impact of the Alexander Technique in preventing muscular injuries and emotional holdings. Since the Alexander Technique gives emphasis to teaching individuals how to use themselves effectively, it provides them with the necessary skills (e.g. inhibition, body awareness) to prevent muscle strain or injuries (Williamson, 2011, p.5). Special emphasis has been put on piano players, the majority of whom are encouraged to use their fingers arms and weight in specific ways, often ignoring the negative impact that such decisions have on their whole body. The Alexander Technique helps the pianist to function as a whole and thus to perform more effectively.

In relation to music teachers, Brandes and Dans claim that the Alexander Technique provides teachers with the skills to identify and stop maladaptive patterns of movement which hinder the performance of their students (Brandes & Dans, 2007, pp.2-4).

2.4.7 Empirical evidence on the impact of the Alexander Technique on performing arts

Unfortunately, except for the personal and anecdotal testimonies of actors and dancers, there is no empirical data to support these claims. Therefore, future studies would benefit from addressing the lack of evidence in these two fields (dancing and acting) in order to validate or refute the effectiveness of the Alexander Technique.

On the other hand, there are many studies that have examined the impact of this technique on musicians. Doyle's study (1984, pp.128-129, 266-267) is one of the first studies that have investigated the impact of the Alexander Technique on the physiological and psychological functioning of violinists. The sample of the study consisted of non-professional violinists (n = 72) who were divided randomly into two groups: one control group and one experimental group exposed to lessons in the Alexander Technique. All participants were photographed in profile while in the most comfortable sitting position before the implementation of any intervention. After the completion of the intervention they were photographed again, so that changes in posture could be observed. The outcomes of this study revealed that the group exposed to the Alexander Technique exhibited significant positive changes in body position when comparisons were made between the pre-intervention and post-intervention phase. Furthermore, reduction in the levels of neck tension was also observed, which the authors attributed to the postural changes.

Valentine et al. (1995, pp.130, 138-140) also examined the impact of the Alexander Technique on the performance of music students. The study sample (n = 16) consisted of instrumentalists and singers. Participants were randomly divided into two groups, one group that attended 15 lessons in the Alexander Technique and another group that did not receive any Alexander Technique instruction. The evaluation of subsequent performances was based on three measurements: (i) assessment of the video-taped performance by experts, (ii) assessments of heart rate (as a stress sign) during performance, and (iii) questionnaires on mood characteristics during the performance completed by the music students. The performance of students was thus evaluated in terms of stress levels and technical skills, in both low and high demand situations (recitals). A positive impact in relation to stress levels and technical performance was observed. The experimental group exhibited more positive attitudes towards performance after the completion of the intervention. It is worth mentioning that the observed positive influences of music students were significant only in low demand situations.

Bosch & Hinch (1999, pp.246-251) examined the impact of the Alexander Technique on the performance of two flute students (case studies) who were in different

developmental stages in relation to performance skills. In both cases, the students became aware of their maladaptive habitual patterns which affected their performance, caused them to perform at a lower standard and to suffer from fatigue and low back pain. As a result of the lesson interventions, tension levels were reduced, correct breathing patterns were established, postural changes were observed and these changes were not limited only to music performance but were also found to be present in the students' daily activities.

Valentine & Williamon (2003, p.1) compared the effects of the Alexander Technique and neurofeedback on the performance of music students (n = 10). Participants were randomly assigned into two groups: one attending lessons in the Alexander Technique and the other exposed to neurofeedback. The students' performances were video-recorded before and after the interventions and evaluated by experts. Changes were evaluated in relation to the following areas: the relationship of the head-neck-back, upper limb/back, hips/balance, face/eyes, breathing, fingers, direction of knees, thought direction, inhibition and overall poise. Anxiety was also assessed before the students' performance. Several interesting findings were yielded. In particular, the group that received neurobiofeedback training was the one that showed greater improvements in relation to music performance. Reduction in the levels of anxiety before performance was observed in the two experimental groups. The group that learned the Alexander Technique exhibited greater improvement in comparison with the neurofeedback group in the areas of the relationship in the neck-head-back, upper limb/back, thought direction, inhibition, fingers and overall poise. Of the musicians in the group that received Alexander Technique lessons, singers in particular demonstrated a greater improvement than instrumentalists in the areas of the face and eyes, fingers, thought direction and hip/balance. This study concluded that there can be objective demonstration of the positive effects of the Alexander Technique to musicians.

Hoberg's study (2008, pp.1-93) laid emphasis on the competitive nature of instrumental players and the performance anxiety that musicians can experience as a result. This investigation attempted to determine whether the attendance of classes in the Alexander Technique could reduce levels of performance anxiety significantly. The participants in this study were divided in two groups; one experimental (exposed

to the Alexander Technique) and one control group. Each group consisted of flute players, aged between 11-18 years old, who exhibited high degrees of performance anxiety. Research findings showed that the Alexander Technique reduced levels of performance anxiety experienced by participants. In fact a majority of the participants described it as a life changing experience which allowed them to feel in control of the situation and thus reduced the levels of stress they were experiencing. The only deficit that participants reported was the slow process of change, since it takes time for individuals to stop reacting in habitual ways and replace these movements with more natural ones.

Overall, based on the five studies that were reviewed, exposure to lessons in the Alexander Technique has demonstrated a plethora of positive impacts including improvement in musculoskeletal function, improvement in kinaesthetic experience and improvement in the psychological state of musicians. The only drawback that was reported from subjects was in one of the five studies and was related to the need for long-term exposure to the Alexander Technique in order for changes to be experienced. This contrasts with the study by Little et al. (2008) mentioned above, where only six sessions appeared to provide benefit. So far, there has not been an extended laboratory study on the possible impact the Alexander Technique may have on the performance of pianists. Perhaps the nature of both teaching processes (piano performance and Alexander Technique) discourages the accuracy of laboratory outcomes due to the artificiality of the set environment, a fact which provides fertile ground for scientific debate and experimentation. In the next section the effects of the Alexander Technique on piano performance will be examined within natural teaching environments.

2.4.8 The Alexander Technique and Piano: Empirical and theoretical evidence

Playing an instrument places distinctive physical demands upon musicians and makes them vulnerable to specific types of misuse or physical injuries. In this section the existing empirical data is cited regarding the impact of the Alexander Technique on piano performers. Theoretical evidence concerning this method of education in relation to piano performance is then analysed within the context of general textbooks by authors who are Alexander Technique teachers. The literature review of the

empirical data has yielded two studies that have investigated the effectiveness of the Alexander Technique on piano performance.

Santiago's study (2004, pp.18-21, 349-360) was one of the first attempts to evaluate the impact of the Alexander Technique on the process of learning and the performance of piano students, which was based on a complex research design. In particular, quantitative and qualitative data were collected through a variety of research tools including experimental strategies, questionnaires, interviews, and group discussions.

In total 24 piano students participated in this study and were randomly assigned by pairs to control and experimental groups. The outcomes of this study revealed that piano teachers, although well trained in dealing with issues of technical performance, lacked the necessary skills to deal with the physical and psychological needs of their students. In general, it was suggested that the Alexander Technique has a positive effect on the learning process and thus on the students' performance.

The data analysis revealed a number of secondary findings, which have equal importance for improving the piano skills of students. One of these findings is related to piano pedagogy, which typically does not train students on body awareness and focuses solely on the musical outcome. This emphasis often results in performance anxiety, in physical injuries and misuse of body muscles and joints. An additional finding is that piano pedagogy tends to preserve a dualistic conception of the student as having a separate mind and body and often does not consider students as an integrated unity. Furthermore, lessons in the Alexander Technique are traditionally student-focused, the lesson design being tailored primarily around the student's needs, while piano pedagogy is primarily teacher-focused, the lesson design aiming to cover hierarchically a body of technical, theoretical, stylistic and expressive knowledge. A careful examination of the secondary findings reveals that traditional piano pedagogy seems to contribute to a great extent to the physical or psychological problems that arise in pianists.

Wu's case study (2010, pp.vi-vii) was an attempt to investigate the effect of the Alexander Technique on piano performance while playing the Alfred Cortot study

edition of Chopin's Études. The author, through the process of self-observation, concluded that it is important for a pianist to use the whole self to achieve an artistic piano performance. Wu claims that an important prerequisite for achieving this goal is to be fully aware of the body in order to prevent technical skills from interfering with the constructive use of the self. Control of the maladaptive movement patterns and inhibition were found to be the solution for developing a freedom in piano technique.

The theoretical evidence is presented here by three Alexander Technique teachers. Nicholls and Vineyard explore applications of the Alexander Technique in piano playing as part of their general description of the principles and procedures of the technique. Alcantara follows a similar method of analysis of the principles and procedures, adding his expertise as a musician by examining specific pianistic issues.

2.4.8.1 Carolyn Nicholls

Nicholls examines two main challenges for musicians: poise and stamina during playing. According to Nicholls, the relationship of a musician with gravity determines the poise of their movements in general movements (as opposed to task-specific movements such as piano playing). This poise will then be transferred to instrumental playing. When a musician's poise is not interfered with, this results in good use which in its turn allows musicians to exert as much effort as needed for the given task, "no more and no less" (Nicholls, 2008, p.103).

Emphasis is often laid on support in pianists, which it is claimed enables the free use of the arms. This support is again, according to Nicholls, a result of the general use of the pianist and is not restricted to the process of piano playing. According to her, lack of support results in antagonistic muscular efforts, which bring about heaviness and tension in pianists' arms, which in turn leads to tension and heaviness in the sound produced (Nicholls, 2008, p.104).

Regarding the performer's position at the piano, Nicholls addresses the notions of position in space (e.g. standing, sitting), preconceived postural ideas that constrict a pianist's movements (e.g. straight back) and views on stool heights. She suggests that instead of concerning themselves directly with these issues, pianists should consider

more the general principles of a supported torso, free breathing, co-ordination of the arms, slow practice and listening (Nicholls, 2008, pp.106-110).

According to Nicholls, who is a third generation Alexander Technique teacher and works extensively with musicians, the sense of unity and interrelation of the parts of the torso both on a skeletal as well as a muscular level is proposed as a means of creating a stable support. Freedom from tension in the process of acquiring this support results in freedom in breathing. This in turn rids a pianist of peripheral tensions that occur in the arms, neck and jaw. Nicholls considers the permanent position of pronated forearms not to be part of the natural use of a pianist and can cause problems in the upper arms, forearms and hands. Co-ordination of the arms is seen as necessary to avoid these problems as is co-ordination within one hand. Slow practice is suggested by Nicholls as an opportunity to practise good use and to inhibit automatic responses that lead to rigidity and tension. She explains how the application of the Alexander Technique can facilitate the important pianistic skill of listening to oneself while practising the piano and she considers this skill a vital prerequisite for the production of the desired sound and high quality music making. According to Nicholls, the skill of listening to oneself is achieved by awareness and the sense of presence which both allow for a fine neuromuscular co-ordination: "Having clear concise intention in your mind and direction in your body is the most powerful combination for creating the sound you want" (Nicholls, 2008, p.108).

Nicholls offers the case study of a pianist who has managed to release tensions in his arms and hands by following the processes of the Alexander Technique. The pianist's report begins with the effective application of directions of the Alexander Technique to his whole self and to general aspects of his life through the practice of the semi-supine procedure. He proceeds to describe the successful application of the principle of inhibition to his emotional and physical anxiety and the successful application of the principle of directing to the practical aspects of playing the piano. The pianist's experience of somatic embodiment, or, as he describes it "my mind now has been absorbed into my body and my body into my mind" was the psychological effect of the process of releasing, which reportedly had a positive effect on his creative side as a pianist and composer (Nicholls, 2008, p.110).

2.4.8.2 Missy Vineyard

Alexander Technique teacher and author Vineyard uses the case of a piano student and her guidance through a lesson in the Alexander Technique to elaborate on the issues of anxiety in performance, attention, awareness and conscious inhibition (Vineyard, 2007, pp.91-104).

According to Vineyard, the student's primary problem is performance anxiety. The symptoms reported are trembling muscles, lack of concentration and dizziness. Vineyard notices that during performance the student presents problems in locomotor co-ordination of normal standard. She guides the student to observe himself and gradually increases the levels of observation from gross events (e.g. difficulties in playing the piano and when they occur) to more detailed events (e.g. what the student is doing with different parts of his body while performing). In addition to observation of physical, intellectual and emotional changes, Vineyard places an emphasis on asking the student about the timing in which these changes occur. During a more advanced phase of the lesson, the student realises that he is causing his own problems.

Based on Alexander's discovery that our sensory appreciation is faulty (Alexander, [1932] 1997, p.430) Vineyard notes that although there are problems expressed in our physical bodies these problems are not necessarily medical and are most likely to be caused by "*an endlessly self-reflecting and distorted image in our minds, which holds surprising power to influence our behavior and shape our inner life*" (Vineyard, 2007, p.95, italics as in original).

As an extension and result of faulty sensory appreciation, Vineyard claims that our beliefs shaped by this faulty appreciation "not only limit our thinking, they steer us in the wrong direction" (Vineyard, 2007, p.96). Once the piano student acknowledges feelings of fear, anxiety and unrest, Vineyard guides him through a process of self-observation in order for the student to create a more accurate representation of his physical and mental self, which will lead to a process of self-correction. This is a process which is similar to the way Alexander describes the discovery of his technique in his chapter *Evolution of a Technique* (Alexander, 1997 [1932], pp.409-429).

In introducing her own teaching tools to the lesson of a pianist in the Alexander Technique, Vineyard asks the pianist to use what she has coined "negative directions". The moment that the pianist notices tension in his neck and shoulders he is instructed to think to himself, "*I'm not playing the piano*." (Vineyard, 2007, p.99 italics by the author). This new stimulus aims at disengaging the pianist from the process of piano playing which triggers fear and anxiety in him. When this is successfully applied by the pianist, it results in better interpretation, a better sound, an easier technique and a better look according to both Vineyard's observations and the pianist's feedback.

According to Vineyard's explanation of this learning process, the pianist is learning a new way of thinking which annuls the message to his amygdala, a complex structure in the brain that performs a primary role in the processing of memory and emotional reactions (Amunts et al., 2005, pp.343-52). Learned change in the pianist's thinking pattern has an impact on the behaviour of his mind:

> Since his thoughts can stimulate his amygdala to produce anxiety, they can also lessen or prevent this stimulus, and so indirectly alter his neurochemistry and defense reaction. This is not conscious choice but *conscious inhibition. It is the ability to cease unwanted activity in the organism at a neurological level through conscious thought, which in turn changes the organism's activity at a larger, behaviorial level.* (Vineyard, 2007, p.104, italics as in original)

This idiosyncratic approach to teaching by Vineyard has introduced a new perspective into the interpretation of the principles of the Alexander Technique. In terms of its application to piano performance this approach seems to demonstrate the need for receptivity to the re-formation and renewal of existing practices of somatic methods as well as existing approaches to the teaching of piano.

2.4.8.3 Pedro de Alcantara

Alcantara's textbook is aimed at all musicians and covers all principles and procedures of the Alexander Technique as applied in music practice and interpretation. However, in this process, Alcantara examines problems that pianists face both on a somatic and a pianistic level.

While interacting with a pianist with carpal tunnel syndrome, Alcantara states that the Alexander Technique approaches this medical problem in a non-medical way. The process of eliminating this syndrome is one that does not focus on the use of the pianist's wrists where the symptoms of pain and discomfort appear but examines the use of the pianist's whole mind and body. The pianist that Alcantara used as a case study exhibited a general picture of misuse, including contraction of the head into the spine, twisting of the trunk, excessive muscular tension, hyperenergetic behaviour, emotional agitation and obesity.

Alcantara addressed none of these issues specifically. On the contrary, he was concerned more with the general manner of being and condition of the pianist and, in particular, her Primary Control. Although the changes that resulted from this educational process were gradual, all of the aforementioned symptoms were eliminated, including her specific problems having to do with carpal tunnel syndrome, suggesting strongly that her symptoms were actually the result of her general misuse and not a 'medical' condition (Alcantara, 1997, pp.22-24).

In dealing with the problem of double-jointed pianists, the solution may call for more tightness in the joints. Alcantara advises readers that because directions in the Alexander Technique involve "a perfect balance between expansion and contraction, this may sometimes be achieved only with the proper tensing of the body parts that *need* tensing". Thus, in the case of a double-jointed pianist, the amount of power and solidity needed to play the piano may involve a direction of the individual resulting in a kind of 'tightness' to compensate for the laxity in the joints (Alcantara, 1997, pp.64, 65).

The importance of healthy arm pronation (rotation of the arm inwards used while sitting, for example, in the movement of placing the arms from a hanging position to a piano playing position) in pianists is emphasised by Alcantara not only as part of their pianistic condition but as part of their general condition too. Alcantara quotes Alexander's categorisation of three different degrees of use of the arms, the third (pronation of the arms) being the indicator for a well co-ordinated person:

> the properly co-ordinated person stands with the back of his hands forward, the thumbs inwards, and the elbows slightly bent outwards (Alexander, 1997 [1918], p.173)

Alcantara claims that this pronation creates a good dynamic balance in a pianist's arms and body and offers as an example the good use demonstrated by pianist Artur Rubinstein in two photographs taken at age 19 and at age 75 (Alcantara, 1997, pp.129-131).

Regarding physical power and strength as related to sonorous piano playing, Alcantara argues that the main problem lies in the common misconceptions about the muscular tension which pianists usually associate with the application of strength while playing and their beliefs about how the production of a big sound at the piano occurs (Alcantara, 1997, p.135). The unnecessary movements that usually occur in a pianist's effort to produce a big sound are detected as lifting of the shoulders, downward contraction of the back with a resultant muscular tension in the arms and hands. The struggling pianist "creates tensions within himself, then he fights against these very tensions, believing all the while that he is merely using the force needed to play loudly" (Alcantara, 1997, pp.135, 136).

The prerequisites that Alcantara proposes for the production of a big sound at the piano are: a) exertion only of the effort needed, b) more confidence in the process of sound production and c) free movements of the apparati that execute the sound. According to Alcantara, "the source of physical power, in music-making and otherwise, lies in the back, not the arms…if the back is well co-ordinated, it will be by definition strong, even in the absence of bulky or taut muscles" (Alcantara, 1997, p.137). When achieved through the processes and procedures of the Alexander Technique, the well co-ordinated back allows the arms to move freely; this co-ordination and freedom eliminate the possibilities of musculoskeletal conditions and repetitive strain injuries in pianists and are conducive to flexibility in sound production (Alcantara, 1997, p.138).

In addition, Alcantara supports that the procedure of the Alexander Technique called the whispered 'ah', when adopted by pianists, frees the muscles of the face and jaw.

The freedom of the jaw is conducive to freedom in the movement of the arms and hands and, as a result, to piano performance (Alcantara, 1997, p.151).

An important issue for the serious and professional pianist is the ceaseless hours of practice, which are often considered to be the cause of piano-related musculoskeletal disorders (PRMDs). Alcantara argues that there are two elements that contribute to the misunderstanding of treatments of the condition of long hours of practice: first of all, the misunderstanding of what stamina in piano playing actually means and secondly a confusion between overuse and bad use.

With regards to building stamina, Alcantara suggests that frequent interruptions during a practice session have proven to be beneficial both mentally and physically and that pianists will benefit from interspersing other activities in their practice as this alternation will activate mechanisms that are not activated during the long hours of practice, therefore decreasing the chance of overusing of the same mechanisms used during playing.

As regards overuse Alcantara argues that "fatigue is symptomatic not of weakness or lack of endurance, but of misuse of the self" and proposes the engagement of good use of the self according to the principles of the Alexander Technique (Alcantara, 1997, pp.197, 198). He describes a pianist's typical misuse as follows:

> The pianist slumps at the piano and brings her head down when looking at the keyboard; lifts her shoulders and throws her head downwards first, then backwards with every attack; twists her torso to move her hands across the keyboard. (Alcantara, 1997, pp.218, 219)

The principle of inhibition is also useful in playing scales and, in particular, in passing the thumb under the hand (changing positions of the hand). Alcantara proposes practicing short excerpts of a C major scale (e.g. Right Hand fingering c1, d2, e3, d2, e3, d2, c1, d2, e3, change of hand position f1, g2, a3) in which the change of hand position occurs only after nine notes giving thus the pianist "more time to prepare each change – by inhibiting the desire to change too soon or too abruptly" (Alcantara, 1997, p.238).

In relation to missing notes in fast and abrupt play, Alcantara observes that these are a result of general misuse of the pianist and the cause of annoyance, dissatisfaction and excessive eagerness to hit the right notes, which in turn induces misuse and guarantees a vicious circle of physical, mental and musical failure. To break this vicious circle, Alcantara proposes that the pianist should stop approaching the issue of targeting the right notes through the old faulty choreography and detach themselves from the desire to aim at the right note. Alcantara believes that it is this desire that renders this choreography faulty (Alcantara, 1997, p.245). A neuromuscular conditioning exercise is proposed for achieving a target during fast play in conjunction with the release of the desire to be right, which is another important goal in the Alexander Technique (Alcantara, 1997, pp.246, 247).

Through his description and analysis of the principles of the Alexander Technique, Alcantara strongly advocates the application of a correct use of the self for the achievement of technical challenges. The correct use of the self he claims, when applied by the pianist, is a means of achieving many of the most desired pianistic goals such as accuracy, co-ordination, leaps, and breaking down automatic responses in octaves (Alcantara, 1997, pp.237-248). Alcantara's book is one of the most informed texts on the applications of the Alexander Technique to music performance. As is the case with Vineyard and Nicholls, Alcantara examines applications of the Alexander Technique to piano performance only sporadically in the form of a paradigm in order to demonstrate more general concepts pertaining to the Alexander Technique.

This section reviewed the origin of the Alexander Technique, the various definitions and theoretical concepts that place it in the wider field of somatics. The impact of the Alexander Technique was investigated in relation to physical, psychological and psychomotor benefits. This was achieved through empirical evidence of the effectiveness of the Alexander Technique in medical conditions as well as in conditions occurring in performing artists and musicians in particular. The impact of the Alexander Technique on piano performance was examined through empirical and theoretical data. The information provided by experts in both fields shows that the Alexander Technique has a positive impact on all aspects of piano performance:

learning, practice, performing psychology, interpretation and teaching. The work of Santiago (2004), in particular, which used subjects in pairs and third-person-perspective evaluation has shed light on the application of the Alexander Technique. In contrast to the Pilates Method and Yoga, the Alexander Technique is a somatic method that has repeatedly been the subject of academic research by musicians and pianists in particular.

Summary and conclusions

The four sections of this chapter explored the broader field of Somatic Education and took a closer look at three methods that form the central theoretical axes of this study. Review of the existing literature revealed that all three methods can be considered as methods of somatic education. These methods have multiple applications to the performing arts and have been extensively considered, examined and researched as to their impact on the performance of artists with positive results. Interestingly, there is a gradation in the relativity of the bibliography on each somatic method to piano performance: the bibliography on the Pilates Method revealed benefits in the general health of people and performing artists in particular; the bibliography on Yoga revealed general benefits, benefits that address issues of performing artists and published accounts by two Yoga instructors who are also pianists of the beneficial effects of Yoga on piano performance; finally, the bibliography on the Alexander Technique revealed more scrutinised analyses on its effects on piano playing by teachers of the Alexander Technique and by pianists who are also teachers of the Alexander Technique. Although overall it may be argued that there is limited bibliography in the area of somatic education pertaining to piano performance, the extensive bibliography in the analysis of movement in all three somatic methods as well as the first attempts at academic research in the area of somatic education and piano performance suggests that we are traversing only the beginning of a holistic consideration of music performance and piano performance in particular.

In order to be able to have a more complete perspective of the existing and potential somatic applications to piano performance, there needs to be further investigation, this time reversing the targeted area of literature. Thus, the next chapter will take a closer look at the history and development of piano performance and pedagogy with a view

to detecting any existing somatic instructions from the beginnings of keyboard treatises to present interactive methods. It will also juxtapose and compare modern problem-free piano methods in order to see which somatic principles are employed by piano pedagogues in order to convey their thoughts and beliefs on injury-free, effortless and effective piano performance.

Chapter 3

Existing Applications of Somatic Education to Piano Performance

This chapter aims at answering the research question "What is already known in the literature of piano performance regarding a holistic consideration of pianists?". The review of the relevant literature first offers a more specialised examination of the existing categorisation of literature made by scholars and pianists in order to review the evolution of piano performance as seen and categorised by these authors. Secondly, and most relevantly, the literature review examines the existing somatic considerations within textbooks which have served as tutors and guides to many a generation of piano performers.

3.1 Categorisation of Literature

Piano performance has been examined and analysed by numerous scholars, pianists and pedagogues and its analysis is usually categorised chronologically in conjunction with the development of the piano as an instrument (Kochevitsky 1967, pp.1-18). However, there are other criteria according to which categorisations can be made, such as the somatic technologies available (Santiago, 2004, p.24) or the idiosyncrasies of technique (Hosaka, 2009, pp.6-42) or ergonomic considerations (Wristen, 1998, pp.24-27). The criterion of categorisation in this literature review will be based on somatic considerations as and when they appear in piano literature. In order to provide an appropriate background to the examination of somatic considerations in piano literature, I will first look at the different approaches of some piano scholars. These authors have each created a different chronological or contextual juxtaposition of piano methods and approaches according to their respective research criteria, motives, priorities and aims. As will be seen, the following account reveals the lack of a holistic way of considering the history of pianism both in the somatic sense of piano performance and its various processes (learning, teaching, practice and interpretation) and in an all-encompassing strategy of categorising the developments in the synthesis of treatises and important textbooks of piano playing. This account will provide an appropriate pianistic historical background for the reader to then understand my own categorisation and to contextualise piano performance in the area

of movement analysis, whether it is focused on specific technical elements or wider somatic considerations.

3.2 Defining Piano Performance

Piano performance is the activity that encompasses the areas of learning, practising, interpreting and teaching the piano. As this research examines the contribution of somatic education to the area of piano performance, all of the aforementioned aspects of piano performance are relevant to this thesis.

Review of the plethora of texts on piano performance reveals that treatises, methods and articles on piano performance do not, in their majority, distinguish between learning, practice, interpretation and teaching, although there is a persistent attempt to define technique (Neuhaus, 2010 [1973] pp.3, 82; Osada, 2009, p.14; Hosaka, 2009, p.6; Wristen, 1998, p.24; Kochevitsky, 1967, pp.1-5). The word technique thus takes on a multiple connotation, encompassing touch (Couperin, 1716), fingering (Clementi 1974 [1801]; Neuhaus 2010 [1973] p.141; Zidaru, 2005, p.1), tone production (Dickerson, 1962, p.6), talent (Taylor, 1994 p.111; Osada, 2009, p.14), pedagogy (Lennon, 1996, p.48; Santiago, 2004, p.26). More specifically, in Lennon's qualitative approach to the study of piano teaching (1996, pp.233-234), learning and teaching, and, consequently, practice, are seen as aspects that can induce passion for music and performance.

Many pedagogues look beyond technique to questions of developing musicianship and practising. Santiago (2004, pp.26-37), examines the various processes applied by piano pedagogues that lead to accomplished piano performance and which include, amongst others, the principles of musicianship, interpretation and gradual learning. According to Santiago, piano practice should be regular and should entail "fingering, pedalling, sight-reading, technical fundamentals, touch, repertoire and techniques of composition" (Santiago, 2004, pp.47-54).

In considering piano performance as an art taught either by teachers who only teach or teachers who are also performers, Neuhaus (2010 [1973], p.169) distinguishes the capacities of the "pure teacher" as opposed to the "teacher-performer", a view that

reflects the pianistic ethos of the mid-20th century. However, a search of contemporary piano teacher training programmes reveals that piano teachers worldwide nowadays receive expert training in becoming soloists or combined training in becoming both soloists *and* pedagogues (Musical Chairs, online).

A contemporary certified piano pedagogue will have performed extensively at a high level in their career before becoming an accredited teacher. Piano performance is, therefore, the common ground and the ultimate goal in the four processes of the formation of a pianist, namely, learning, practice, interpretation and teaching. In a pianist's developmental progress, these processes take place chronologically one after the other and all together simultaneously.

The contextualisation of a somatic approach to piano performance dictates a new kind of categorisation and not one that is restricted solely to any one of the components of piano performance. Therefore, in order to achieve a better view of somatic applications to piano performance the focus in the multitude of literature that analyzes piano performance will be on detecting any existing comments, notes, instructions, analyses and methods that consider pianists holistically and somatically in terms of movement (see Chapter 2.1). This means that analyses of movements of the arms, hands and fingers, as dealt with in the majority of piano performance literature, will not be taken into consideration as being part of a holistic approach. In the context of the present thesis, preoccupation solely with the playing apparatus (fingers, hands and arms) is proof of a tendency towards a microanalysis of pianistic movement, namely, the opposite movement approach to that of somatic education (see Chapter 2.1).

3.3 Researchers on piano performance: criteria of categorisations

As has been observed in the reviews of Kochevitsky, Santiago, Hosaka and Wristen, the main criterion of the researchers regarding the development of keyboard and piano performance is the degree of distinction and isolation (or inclusion and integration) of the movements of the fingers with regard to the movements of the wrists, elbows and shoulders. Analysis of movement in each of these areas respectively has reflected the mechanical idiosyncrasies of the instrument of each period (Wheatley-Brown, 2011, p.4) or the technical style prevalent during the authors' time (Hosaka, 2009, p.6).

However, in reviewing the piano literature from its beginnings to the present, researchers have not sufficiently emphasised the degree to which piano methods are somatic. The next subsections set out to examine the somatic ideas as they appear in the piano literature.

3.3.1 Kochevitsky

Kochevitsky's historical survey of theories of piano technique (1967) is the first of three parts of an original method of piano playing and, although not an academic document, it explores the history of piano technique from a progressively inclusive viewpoint. Three distinct chapters describe three distinct chronological ideologies of technique based on (i) fingers alone, (ii) participation of the arm and, finally, (iii) growing awareness of the role of the mind.

In the chapter on "Technique Based on Fingers Alone", Kochevitsky argues that the starting point of the history of piano is from 1775 to 1800. C.P.E. Bach, Clementi, Mozart and Cramer are quoted as the most important developers of the finger school followed by Hummel, Kullak, Czerny and Hanon (Kochevitsky, 1967, pp.1, 2). The characteristic traits of this school are listed as (1) isolation of the movement of the fingers from the rest of the fixed arm, (2) isolation of the mechanics of keyboard training and strict regimens of ceaseless practice and (3) a schooling guided by the teacher as absolute authority (ibid, p.3). Somatically interpreted, these three traits correspond with (1) isolation, (2) dualism and (3) third-person view respectively (see Chapter 2.1). Emphasis is also placed on the two infamous devices for finger gymnastics, the Chiroplast and the Dactilon, which come to mechanise the pianist (ibid, pp.4, 5). Kochevitsy focuses on the work of pedagogues of the German schooling and overlooks the French *jeu perlé* as epitomised by Saint Saëns, which had a significantly different hand and finger shape to the German schooling. Nevertheless, the characteristic traits of both German and French finger schoolings are similar in their use of the anatomy of the hand and arm. This mechanical consideration of the pianist can be seen as the apotheosis of muscular micromanagement which was meticulously set out by the finger school of Hummel, Kullak, Czerny and Hanon. Seen through the lens of the present thesis this is the most anti-somatic of all periods of piano pedagogy.

In Chapter Two, entitled "Participation of the Arm", Kochevitsky describes the progressive considerations of the early 19th century led by the obstacles encountered by composer-pianists who struggled to escape from the restrictions of the finger school. Chopin, Rubinstein, Schumann, Liszt, Leschetitzky all strove to free piano performance from its mechanical aspect (ibid, pp.6, 7). Kochevitsky emphasises the importance of Ludwig Deppe's contribution to the liberation from the constriction of the finger school through introduction of the free fall of the arm. According to Kochevitsky, Deppe opened the way to the next school of pianists: the anatomic-physiological school, which attempted to introduce scientific concepts in order to perfect the art of piano performance (ibid, pp.8, 9). Breithaupt and Matthay were the main advocates of freedom, relaxation and the effects of the arm weight. They both demonstrated their principles in manuals filled with scholastic detail accompanied by descriptive photos (ibid, p.9). Kochevitsky argues that the anatomic-physiological school failed to prevail due to the simplification and inadequate and inaccurate anatomical comprehension, as well as the lack of inclusion of the function of the brain and the central nervous system (ibid, p.10). However, it becomes evident (see sub-section on Matthay and Breithaupt) that both Breithaupt and Matthay explored radical ways of piano playing, their greatest and most daring discovery being the insufficiency of isolated finger movement. Again, comparison with the somatic movement is inevitable: although practitioners and theorists acknowledge the impasse of dualism so explicitly demonstrated in the inability to reach high levels of artistry characterised by natural and effortless movement, there follows an era of experimentation before entering into somatic considerations of movement in performance.

In Chapter Three, Kochevitsky introduces the "Growing Awareness of the Role of the Mind" as the most advanced school (ibid, p.11). Here, the views of 19th century physiologists Du Bois-Reymond and Müller are examined on the topic of integration and the role of the nervous system in the performance of the muscles as well as the experiments of pianist Raif on the connection of thinking and movement. A significant part of this chapter is dedicated to Steinhausen and his explanation of the psychic origin of piano technique, in which the foundation for the development of speed and dexterity is the removal of excessive muscle action (ibid, p.13). This

principle directed the pianists' interest to the mental will and purpose rather than the agility of the fingers. Kochevitsky differentiates three main but not distinct simultaneous schools of thought in the 20th century. Wiechmayer, Ziegler and Cortot were among the pianists who claimed original methods, whilst remaining fundamentally faithful to the ideas of the finger school. Erwin Bach, Ching, Polnauer, Spielter, Gát and Ortmann followed and either developed or reiterated the principles of the anatomical-physiological prototype. Ortmann is seen as more scientifically compatible with Kochevitsky's views and gains in the author's esteem as the predecessor of the next school that laid emphasis on the psychology of the pianist (ibid, p.15). The psycho-technical school is prefigured sporadically in the history of piano performance by pianists who emphasise the importance of the mind, the psyche and awareness of their integral role in piano performance; Moscheles, Riemann and most prominently Busoni laid the foundations for the psycho-technical school. Representatives of this school were Neuhaus and Kogan and most notably Bonpensiere, who devised his own original system of ideo-kinetics (ibid, pp.17-18).

Thus, Kochevitsky describes the driving forces behind the piano schoolings as they have occurred chronologically but also according to his conviction that piano performance cannot exist without integration of the mind and the body, starting from the extreme of isolation in mechanical finger movements and culminating in his era of psycho-technical considerations, which also coincide with the contemporary developments of somatic modalities in the 1960s (such as Rolfing movement, Reichian Orgone Therapy, Hanna Clinical Somatics, Feldenkrais Awareness Through Movement). However, on a purely somatic level, in coining and describing the term psycho-technical school, Kochevitsky fails to propose practical applications of the findings of this school to piano performance. The psycho-technical school thus remains in existence only theoretically.

3.3.2 Stanier

Stanier (1973) was the first to examine the mechanical processes involved in piano performance from a scientific point of view in the form of a PhD thesis. In lieu of a history of piano performance, Stanier considers the work of ten pianists written in the

first half of the 20th century and juxtaposes them in chronological order of first publication.

Stanier describes Brée's book of 1902 as an inaccurate account of the methods of Theodore Leschetitzky. Having later made his own anatomical and biomechanical analysis of the hand and arm, Stanier reinstates the ambiguity of Brée's writings (Stanier, 1973, 5.2) highlighting the confusion as to their applicability in piano practice or piano performance due to the unclear intention of the method. Matthay's method is considered "entirely original"; however, after his analytical examination of the function and structure of the hand and arm, Stanier points out the problems that occur from Matthay's use of language both contextually and conceptually (ibid, 5.3). Ambiguity is seen as central in Matthay's method regarding the verbalisation of technical issues such as forearm rotation and relaxation. Stanier's viewpoint on Matthay's confusions and misconceptions seems to have been supported by Ching (1946) and by the fact that Coviello (1963) wrote an explanatory book entitled "What Matthay Meant". Breithaupt is considered as an exponent of the German tradition and Deppe's ideas in particular. Stanier regards Breithaupt's book to be legitimate from an artistic point of view but not from a scientific one (Stanier, 1973, 5.1). However, the fact that Breithaupt makes instinctive and logical conclusions seems to be embraced by Stanier. Ortmann's two volumes of the analysis of piano playing are acknowledged by Stanier for their scientific content as opposed to other authors. Following his own biomechanical analysis of the movements of the arm, Stanier points out the several conceptual misunderstandings that occur in Ortmann's theorems regarding the estimation of internal forces and gravity, due to Ortmann's mathematical approach to the analysis of mechanics, instead of what would be a more appropriate ergonomic approach (ibid, 5.6). Stanier considers Ortmann's work to be observational rather than investigative and criticises both the actual content as well as the manner of analysis as insufficient and inappropriate for the purposes of piano playing. Stanier condemns Fielden for falling into the same pseudo-scientific trap as Matthay (ibid, 5.4). Fielden's attempt to discourage the reader/student from going to extremes of relaxation or contraction and looseness or tension is expressed with ambiguity, double meanings and a confused non-scientific approach. Ching's approach seems to stand separately from his peers, according to Stanier. Although he praises Ching as being the 'most scientific of all the investigators' Stanier reconsiders

his view somehow, following his own scientific observations (ibid, 5.7). While appreciating Ching for his clear and reasonable writing and for consulting other scientists on pianistic issues, Stanier argues that Ching misinterprets the scientific facts used, some of which are drawn from Ortman and Schultz. Schultz's analysis is seen as the most detailed and difficult to interpret. Apart from an extensive review of his predecessors' writings, Schultz argues in a manner that is criticised by Stanier as being only partially scientific, and illogical (ibid, 5.5). Stanier acknowledges the fact that Schultz has in his writings raised more questions than any of his peers and predecessors. However, the complexity of Schultz's explanations is associated with a total lack of accurate and precise calculations in analysing dynamic systems, which renders his words incomprehensible. Bonpensiere is only catalogued as a contemporary of the other writers reviewed by Stanier (ibid, 0-3). His work is not reviewed or analysed due to its anti-scientific premise to "forget all about mechanical theories and instead teach the brain to develop its technique by instinct", a view clearly opposed to Stanier's initial aim, that of a mechanical analysis of piano playing. Harrison's book is seen as uncomplicated and brief, including an amalgamation of the approaches of his predecessors. Although Stanier states that there is no ground for criticism, he proceeds to reproach the small size of the book and the insufficient development of ideas that could potentially "turn a student into a first class pianist" (ibid, 5.9). Stanier likens the presentation style of Gát to that of Brée and Breithaupt, the main similarity mentioned being in the use of extensive photographic material. Contextually, Stanier feels that Gát is equally ambiguous and unclear, especially as to the mechanics of the finger action during the depression of the key (ibid, 5.8).

Stanier based his thesis on the proliferation of biomechanics, which in the 1970s was gaining ground in the scientific interpretation of movement (Stanier, 1973, 0-3). His chronological review of piano literature was made on the basis of a biomechanic criterion, thus making judgments on pianists' attempts to facilitate piano performance using limited scientific knowledge. His review and criticism is, therefore, characterised by an amplitude of negative comments reiterating the aforementioned obstacle as a prevalent criterion to the scope of the development of piano methods in the 20th century (ibid, 5-10). This may be justified by the fact that his critical analysis is based on the authors' inability to convey their teachings successfully. However, through the narrow criterion of scientific validity of piano methods which were

developed in times of limited availability of scientific processes, Stanier reviews piano literature without, in the opinion of this thesis, giving sufficient weight to the important factor of artistic and pedagogical progress. His approach is, thus, non-holistic in its premise, rendering the detection of any somatic advances by each respective pianist, pedagogue and author impossible.

3.3.3 Wristen

In her PhD dissertation, *Overuse Injuries and Piano Technique: A Biomechanical Approach,* Wristen (1998) examines 20th century pedagogical views of the playing apparatus. She reviews a historical survey of 20th century piano technique, general principles of 20th century piano pedagogy and views concerning the use of technical exercises.

In the historical survey of 20th century piano technique, Wristen focuses on the existence or lack of biomechanical advice within instructive texts on piano performance. She considers the writings of Deppe, Leschetizky, Lhevinne, Matthay, Pichier, Whiteside, Ortmann and Kochevitsky. Unlike Stanier (1973), Wristen's main preoccupation in analysing certain technical approaches is on summing up the core technical principles of each pianist reviewed. She does this by referring to points related to her research such as:

- Relaxation vs support as seen in Deppe's pedagogical views;
- Idiosyncratic views of the collaboration of finger actions as seen by Leschetizky and Lhevinne;
- Matthay's pioneering views on force, relaxation, poise and task-specific techniques;
- Pichier's technical/mechanical approach in the service of musical expression with extensive instruction on posture and position of the torso;
- Whiteside's extreme opposition to the finger school through the advocacy of movements of the whole arm and torso as the main playing apparatus;
- Ortmann's highly scientific analyses and views on relaxation vs controlled movement;

- Kochevitsky's consideration of piano technique as action in the brain with an emphasis on proprioception. (Wristen, 1998, pp.24-48)

Wristen's account reveals the gradual inclusion of somatic thinking which occurs in the various stages of rejection of the isolation schools of piano playing through to increasingly holistic considerations.

In the chapter on general principles of 20th century piano pedagogues Wristen juxtaposes the findings of piano pedagogue and scholar Phelps with advice by piano pedagogues on specific technical issues. Phelps forms the theoretical basis to Wristen's own research by considering the mechanics of the piano and of the body. Wristen then explores the debate which exists between pedagogues regarding technical training. She categorises pedagogues as opposing or supporting the isolated use of exercises for the technical development of the pianist, and supports the opposition with views by scientists in the area of motor learning studies.

Wristen therefore examines the existing piano literature from an ergonomic and biomechanical point of view. In other words, she is concerned with researchers' and piano pedagogues' view on a) the various positions of the fingers, hands and arms as related to the keyboard during different technical textures and b) the function of the muscles during specific piano figurations. Wristen's research contributes substantially to the consideration of the rest of the playing apparati (fingers, hands, arms and torso) in piano playing. Whilst being a less isolated account, which forms the premise for future research on piano-related musculoskeletal injuries, Wristen's work does not consider the pianist as a soma. As seen by Hanna (Chapter 2.1) at the highest level of analysis, the biomechanical perspective alone cannot be sufficiently somatic as it excludes the first-person perspective of a piano performer that experiences and accomplishes artistry, emotion and neuro-muscular co-ordination.

3.3.4 Hosaka

In her account of *Sumiko Mikimoto's Piano Method: A Modern Physiological Approach to Piano Technique in Historical Context*, Hosaka (2009) presents a brief history of piano technique with her own categorisation that resembles that of Kochevitsky. Hosaka aims to present Mikimoto's method within the context of piano

technique manuals written up to the present time and her categorisation criterion is chronological as well as contextual, namely, identifying various tendencies in piano technique:

1. Finger technique
2. Arm weight and relaxation
3. Scientific and physical approaches
4. Psychological approaches
5. Current teaching and awareness of physical limitations and injuries

Hosaka recognises the opposing points of view of the proponents of each different schooling and suggests that utilisation of all technical approaches adequately applied leads to maximised development (Hosaka, 2009, p.42). Her main thesis, which examines Mikimoto's piano method, is predominantly based on the microanalysis of finger movements and their isolated training in a manner that refers to the schools of dexterity of the 19th century. Although some somatic methods are proposed as a parallel beneficial movement culture, neither Hosaka's account nor Mikimoto's method analysed in this account can be considered as somatic as they are focused on a segmented understanding of movement re-education.

3.3.5 Wheatley-Brown

Very close to Hosaka's categorisation, although with a different research motive is Wheatley-Brown's review of the evolution of piano technique in her thesis entitled *An Analysis of Terminology Describing the Physical Aspect of Piano Technique* (2011). Wheatley-Brown's categorisation criterion is based on detecting problematic language that leads to confusions and misconceptions in understanding piano technique. She thus categorises piano literature as follows:

1. Technique for early keyboard instruments
2. Scientific approaches
3. Individualized approaches
4. Injury-preventive approaches

Wheatley-Brown argues that these categories and their respective schoolings still exist today and that the debates are still as vehement as they were at the time of creation (p.32). Although her object of research is not directly pertinent to the present thesis, this categorisation of the literature review is meticulous, comprehensive and, most

importantly, it raises the issue of lack of a global and generic understanding of movement in piano playing. This statement reinforces the existence of limitations presented at the beginning of the present research project with regards to a globally accepted premise of healthy movement in piano playing. Interestingly, Wheatley-Brown examines the discrepancies in phraseology used in modern piano methods, most of which have actively incorporated principles of somatic methods within their curriculum (Fraser, Lister-Sink, Fink).

As has been observed in the reviews above, the main criterion of the researchers regarding the development of keyboard and piano performance is the degree of distinction and isolation (or inclusion and integration) of the movements of the fingers relative to the movements of the wrists, elbows and shoulders. Analysis of movement in each of these areas respectively has reflected the mechanical idiosyncrasies of the instrument of each period (Wheatley-Brown, 2011, p.4) or the technical style prevalent during the authors' time (Hosaka, 2009, p.6). However, in reviewing the piano literature from its beginnings to the present, researchers have not been preoccupied with the degree to which piano methods are somatic. The next section sets out to examine the somatic ideas as they appear in the piano literature.

3.4 Somatic Considerations in Keyboard and Piano Performance Literature

In the review of keyboard and piano performance literature that follows I will examine the existence of somatic ideas from the beginning of keyboard history. Starting from the simple consideration of the existence of a human body that contributes to keyboard and piano performance, I will attempt to demonstrate the gradual progression in the inclusion of information concerning the whole body and its contributing role to keyboard and piano performance on a physical level and, ultimately, on a somatic level.

The literature examined in this review falls under the following categories:

- Couperin's historical harpsichord tutor
- Original piano methods
- Contemporary piano methods in the form of books or DVDs or both

- Contemporary piano methods or research documents which consider the introduction of somatic methods in piano performance

3.4.1 François Couperin 1716

Existing analyses of early keyboard technique of the 18th century emphasise the focus on finger isolation, articulation and the science of devising creative fingering (McGlynn, 1999, pp.1-2; Kochevitsky, 1967, pp.2, 3; Zidaru, 2005, p.1, 2; Hosaka, 2009, pp.8, 9, 10). However, François Couperin's treatise *L'Art de Toucher le Clavecin* (1716) contains revolutionary and pioneering advice that has surprisingly escaped the notice of scholars who have written on body awareness (or lack of it) in keyboard technique.

Couperin introduces the treatise with a plan of his method, in which "the position of the body" is the first application (Couperin 1716, p.1). In the context of his almost 300-year-old treatise, Couperin provides information on the relation of the body to the instrument that complies with contemporary ergonomics for pianists' sitting position (Paul & Harrison, 1997 pp.97, 98, 107). Thus, he suggests a position of alignment of the elbows, wrists and fingers and, most importantly, advises on using an appropriate, adjustable seat that allows this alignment. This discouragement of lowering the wrist from anatomic neutral is also a view supported by Wristen (2000, p.62) on preventing piano related injuries. In addition, Couperin alerts the reader to place something under young learners' feet according to their growth in order to avoid their legs being suspended in the air "Thus, the young learner will be able to support the body in correct balance" (Couperin, 1716, p.3, author's translation). In a similar fashion, he advises on the adequate distance and alignment of the body with the keyboard, again alerting the reader to make appropriate adjustments for young children (Couperin, 1716, p.4). The latter two are techniques used today by expert piano pedagogues for correct alignment whilst seated at the piano (Mark, 2003, p.60, Dybvig, online). Couperin discourages students from engaging in exercises that are painful for the hands as "it is not force that contributes to a good performance but rather the suppleness of nerves" (Couperin, 1716, p.13, author's translation). Although the mechanism of the harpsichord demands far less strength to be played in comparison to the modern piano mechanism there is substantial value in this particular instruction, as

it touches on two much debated issues of piano performance: playing through pain and using strength inducing exercises for improvement of technique. Thankfully, contemporary research has identified that pianists should "never practice through pain" (Wristen, 2000 p.62) and that using more force than necessary induces piano related injury (Lister-Sink, 2005).

Couperin's ideology on the position of the body in relation to the instrument distinguishes him from his contemporaries, but as is seen in later documents of the piano literature, it distinguishes him even from the piano schools of the 19th and early 20th centuries as far as ideas about body posture are concerned. However, the most striking ideas that make Couperin's work unique are in his approach to the physical and mental attitude in relation to playing and his according use of language. The common definition for the word position is "arrangement of body: the way in which something is arranged" (Cambridge Advanced Learner's Dictionary, 2008). The word position is often avoided in somatic education, and in particular in the Alexander Technique, as it often encourages fixture: "in the case of movement behavior, a 'position' would refer to the relative and static placement of body parts with respect to other body parts" (Weed, 2004, p.27). Throughout the introductory remarks on his method, Couperin insists on enhancing his instruction on position with remarks that discourage fixture and tension. His justification for engaging with the issue of the position of the body is the necessity for acquiring 'grace' (Couperin, 1716, p.3). In the case of a stylistic comment of the period that wants the keyboardist to sit with a right-sided inclination towards the audience, he emphasises the need for the knees not to be too tense (ibid, p.4).

Couperin goes as far as to touch on another important somatic principle, that of self-observation. His holistic scope includes advice on placing a mirror on the stand as a corrective tool in order to avoid grimacing. The use of a mirror for self observation was also introduced by somatic pioneer F. M. Alexander in his effort to detect his manner of "doing" and is since considered an appropriate tool for self observation (Alexander, 1997 [1932], p.413).

Couperin's attempt to introduce the use of a stick, a seemingly mechanical device, for remedying the problem of excessively high or low wrist is immediately accompanied

by the following pedagogical advice of a somatic nature: "…we should, with this stick, constrict insistently him or her who plays. Little by little this fault will correct itself" (Couperin, 1716, p.5).

The relationship of the head with the body is a pivotal point of study in the Alexander Technique as is the 'ease of motion' (Weed, 2004, pp.25-33). Couperin acknowledges the importance of the dynamic relationship of the head with the body and the legs as well as the importance of ease of motion in his following remarks: "it is better and more sane not to have a set measure for the head, the body or the legs. We must have an air of ease at the harpsichord: without fixating the look too much on a certain object, nor having too vague a look" (Couperin, 1716, p.6).

As is obvious from the instructions and the linguistic manner used by Couperin, this is a pioneering text that prophesises all aspects of contemporary issues of the relationships within the body and of the body to the instrument. Not only does Couperin cover a very advanced area of ergonomic considerations, but he most astonishingly uses somatic terminology such as "air of ease" and "suppleness in the nerves" and in addition he establishes a foundation for awareness and self-observation, two of the most important somatic principles.

The instrumental changes in the keyboard instruments which led to the formation of the romantic piano occurred very soon after Couperin's treatise was written. However, during the 18th and 19th centuries the piano methods that prevailed focused on the mechanical aspects of piano playing. Composers like Clementi, Czerny, Bertini, Pischna and Hanon all adapted their piano methods and compositions of exercises to the notion that the fingers are the tools with which the piano is played and their function and training should therefore be as isolated as possible from the rest of the body and adjusted to the mechanism of the piano in a mechanical manner. The exercises of Czerny (1844), Pischna (1907) and Hanon (1873) characteristically encourage repetition of the same patterns for as long as the pianist can endure, thus building strength and endurance. Somatic considerations are therefore absent from intervening methods.

3.4.2 Rudolph Breithaupt 1909

Breithaupt's method has been the object of debates and severe criticism from later scholars who have written on piano technique (Kochevitsky, 1967, p.9; Stanier, 1973, 5.1) as to the contradictory comments on technique and ambiguity of instruction.

The second volume of Breithaupt's method (1909) is organised in a very thorough and analytical way, distinguishing what he calls external conditions (the seat, the hand-bridge and the weight of the arm) from the other chapters. Regarding the height of the seat, adaptability to every individual is encouraged. Breithaupt goes a step further than his peers in this ergonomic consideration by recognising the determinative factor that asks for adaptability, namely "the proportions of the physique, more especially by those of the upper body and the lower extremities" (Breithaupt, 1909, p.7). Only then does Breithaupt proceed to a technical principle that has distanced him from other piano pedagogues, that of the relatively low seat in order to allow the wrist and elbow to be at a lower height than the keyboard. In this somewhat idiosyncratic instruction, Breithaupt argues that he proposes it only to beginner students with the ultimate aim of developing the muscles of the shoulders (due to the effort exerted to bring the hands to keyboard level when seated quite low) (ibid).

Regarding the condition of the body, there is a uniqueness in Breithaupt's approach. In particular, in order to validate using a low seat for taller people with long arms and a high seat for short people with shorter arms, his criterion is the "perception of the weight-transmission" (ibid, p.8).

As far as the manner of sitting is concerned, Breithaupt encourages a forward bend of the body in order to ensure support from the thighs rather than from the posteriors "the feet resting firmly on the floor" (ibid). Here, at a first glance, two postural ideas are proposed that contradict modern views of healthy sitting (Mark, 2003, pp.60, 61). However, this is not proposed by Breithaupt as a permanent sitting position; rather it represents a sufficient way of "grasping a chord with both hands simultaneously". From the viewpoint of functional effectiveness this technical point is logical as it

refers to a specific body posture that will aid a specific pianistic application, that of chord playing with both hands. Still, the manner of expression and contextualisation provides, admittedly, a fertile ground for technical misunderstandings. Altogether, this is a whole body consideration. Perhaps the most somatic of Breithaupt's remarks is the following: "The muscles of the lower body and of the abdomen must be relaxed, and the body itself free to perform any movement" (Breithaupt, 1909, p.8).

The consideration of the lower body and the abdomen is in itself revolutionary for the era (see Appendix B). However, the most pioneering and visionary concept is that of a relaxed abdomen: this instruction complies with the most established contemporary views on healthy instrumental and vocal conditioning (Rosset Llobet & Odam, 2009, pp.44, 45; Lieberman, 2004, pp.60, 61). What is more, the concept of the "body itself free to perform any movement" as seen in Chapter 2.1, is one embraced by both dancers and somatic pioneers.

In the final chapter of his method, Breithaupt provides advice on how to practise (Breithaupt, 1909, pp.91-98). Following a vehement opposition to practice by mechanical repetition (continuous subconscious repetition being a point also opposed by F.M. Alexander, 1997 [1923], p.229) and the detrimental effects of finger gymnastics, Breithaupt claims that the most significant principle that has been ignored by previous piano methods is the "economization of energy" (*sic*). He additionally emphasises that the aim of practising should be "to produce the *greatest* tonal effect with the *least* expenditure of energy" (italics by Breithaupt). This concept is compliant with minimum effort to maximum effect taught by contemporary somatic instructors and musicians alike (Bruser, 1997, pp.15-19; Weed, 2004, p.31; Beauchamp, 2008; Alexander, 1997 [1918], p.62). In addition, Breithaupt elaborates on the issue of tension, proposing that the way to reduce friction is found in psychological and physiological relaxation. This realisation leads to the following instruction:

> …all training and educating must be directed upon the solving of the mental difficulties and upon rendering the playing-apparatus (members and joints) flexible, pliant and obedient to the will. (Breithaupt, 1909, p.91)

The principle of mental control over physical functions is also similarly advocated by Joseph Pilates as the core prerequisite for returning to normal health (Pilates & Miller, 1998b [1945], pp.9, 10).

In order to reach perfection, Breithaupt proposes the removal of impediments (Breithaupt, 1909, p.92). He considers impediments of a mental-nervous nature to be limitations and inefficiencies in perceptive and cognitive musical skills as well as pianists' psychological state. Impediments of a physiological or functional nature are those related to the tension in the fingers, hands, arms and the whole body; in this sub-section Breithaupt reiterates his notion of tension versus relaxation and proposes ways of distinguishing between the two. Interestingly, Breithaupt considers stiffness to be of a psycho-physiological nature and this somatic consideration of the psycho-physical unity is supported by Alexander in 1923 (i.e. at a later date) with an emphasis on the "impossibility of separating the "physical" and "mental" operations in our conception of the working of the human organism" (Alexander, 1997 [1923], p.228).

Breithaupt advances further from pure instruction of a general nature that facilitates piano playing, to advice of a general human nature. Here he advises readers on removing all negative aspects of one's character, ethos, pathological symptoms related to negative character traits, as well as, what he calls "external impediments in life: anxiety, care, sorrow, struggle for existence, financial difficulties". These are issues only recently dealt with in the area of psychology of music and the application of somatic disciplines to performance (Khalsa et al., 2009; Yoshie et al., 2008; Gorges et al., 2007) and show the Breithaupt's perceptiveness in giving advice of this nature before its scientific officialisation (Breithaupt, 1909, p.92).

In a separate chapter, Breithaupt (1909, pp.97, 98) analyses the importance and the benefits of correct breathing and their connection to piano playing. The action of free breathing is connected with natural processes both mentally and physically. Breithaupt devises a whole method within a method, his principles being in agreement with the principles of Yoga for musicians (see Chapter 2.3.5). A comprehensive list of all the pianistic skills, including melodic flow, sense of pace, sense of rhythm, technical freedom, interpretative freedom, are all seen as interconnected with the

action of breathing; thus breathing exercises are given the outmost importance and for training purposes, Breithaupt advises that "the pianist should be taught breathing on the system adopted by the schools where singing is taught" (Breithaupt, 1909, p.97).

Within his controversial piano method Breithaupt has, therefore, included pioneering advice and instruction on all aspects of a pianist's soma: posture, movement, ergonomic relation to the instrument, breathing, physical, mental and psychological impediments and how to manage them.

3.4.3 Tobias Matthay 1903 and 1932

Matthay's views on piano performance have been the cause for debate between piano educationalists. Although both his publications were contemporary with the so-called school of free weight, his ideas on the function and structure of the playing mechanism are quite revolutionary.

In his first publication of 1903 entitled *The act of touch in all its diversity* he addresses the importance of the whole body, muscular condition and posture. He introduces students to his holistic approach with the following basic principles: "Tone-production is hence a question of Mechanics, Physics, Physiology, and of Psychology too" (Matthay, 1903, p.20).

As regards muscular education, Matthay argues that the mental distinction between necessary and impeding muscular conditions is of utmost importance. Regarding muscular exertion he explains that "we must learn to *gauge* and *time* these muscular-exertions...we must learn to *time* them to CEASE the very instant they have completed their duties against the key" (ibid, pp.25, 26). Exerting only the effort needed for a particular action is also a principle of the Alexander Technique. Weed maintains that "control of movement has at least as much to do with the turning off of muscles, as it has to do with turning them on" (Weed, 2004, p.31). Regarding muscular exertion, Alexander suggests that we typically approach tasks using unnecessary force, because we do not "gauge accurately the amount of muscular effort required" (Alexander, 1997 [1918], p.63). He demonstrates through daily life examples that people expend unnecessary force in everyday activities (ibid).

Matthay introduces as perfect freedom, the eradication of opposing muscular forces (Matthay, 1903, p.27). This is also a principle embraced by modern biomechanics and well informed instrumental technique (Janiszewski, 1992, p.93; Lieberman, 2004, pp.50, 108-126).

The impact of habits is also addressed in a somatic fashion as regards pianistic education. Matthay stressed the fact that pianistic habits may "…include not only the necessary habits of muscular co-ordination, but habits of mind as well as of body…" (Matthay, 1903, p.38). Alexander stresses the correlation of mental and physical habits in his chapter *Habits of thought and of body*, in which he finds the explanation to the enigma of this correlation to be in the fact that "the majority of people fall into a mechanical habit of thought quite as easily as they fall into the mechanical habit of body which is the immediate consequence" (Alexander, 1997 [1918], p. 52).

Matthay dedicates the fourth part of his first book to position. He argues that if the correct activity and rest are adopted in the muscles that contribute to piano performance then the correct position of the arms and the body will occur inevitably and naturally (Matthay, 1903, p. 273). To Matthay "correct play" is considered the state when we play "at our easiest" and correct positions are "the most convenient ones". This understanding of position coincides with Alexander's understanding of correct position. In an equal manner Alexander maintains that "There can be no such thing as a 'correct standing position' for each and every person. The question is not one of correct position, but of correct co-ordination….anyone who has acquired the power of co-ordinating correctly, can readjust the parts of his body to meet the requirements of almost any position" (Alexander 1997 [1909], p.157). This view is also supported by Nicholls in indicating the right position for playing the piano (Nicholls, 2008, p.105). In addition, Alexander agrees with the concept of comfort and convenience in any activity and supports that a "correct way" is a "natural way" and that the "right way" in accomplishing a given task is the "most effective way" (Alexander, 1997 [1918], p.81). However, Matthay does not adhere to the blind adoption of a correct position as a guarantee of correct piano technique as he does not consider position to be a sufficient indicator. This view is also supported by Weed in his elaboration of the inadequacy of 'position' as a standard of good use as "it refers

to placement rather than movement….In the case of movement behaviour, a "position" would refer to the relative and static placement of body parts with respect to other body parts" (Weed, 2004, p.27).

In clarifying the prerequisites of "easy posture" Matthay shows sensitivity to the subject of individuality of body constitution. He emphasises the "unchanging quantity" of the piano in contrast to the flexible and adjustable capacity of the human body, alerting pianists to pay attention to the relative size of their body parts in relation to the unchanging piano in order to achieve an easy posture (Matthay, 1903, p.275). This concept of the dangers and potentialities of adaptability was also supported by Couperin (as seen above); however, even in the beginning of the 20th century it still remains exceptionally perceptible given the lack of scientific information on ergonomics and biomechanics. The analysis that Matthay offers on the details of position is similar to that of Couperin as far as the distance between the arms and the keyboard are concerned. Matthay goes a step further to offer two categorised sitting positions; sitting "well away" from the piano or sitting "somewhat nearer" to the piano. In doing so he demonstrates the movements required in each of the two positions in order for the pianist to reach the keys with ease (ibid, p.304). Like Couperin, he also mentions the position of the feet as determinative to weight distribution. In characterising the position of the upper body Matthay maintains that the "upright position (or one closely approximating towards it) is obviously the more graceful, and the least fatiguing, when feasible" (ibid, p.304). The lack of rigidity in suggesting the closest possible approximation to an upright position is also in agreement with a view of the Alexander Technique that "The greatest efficiency in activities is accomplished when the spine (and the rest of the locomotive mechanism) maintains its greatest length possible throughout an activity as long as that lengthening procedure is consistent with Mr. Alexander's principles" (Weed, 2004b, p.100). This flexibility in describing position is reiterated by Matthay in summarising the chapter on position adding one more basic principle of good use, namely that muscular condition affects position.

In his second book of 1932 titled *The visible and invisible in pianoforte technique* Matthay offers his revised views on piano playing and his advice on the general movement of the body is more organised and cohesive. In a more settled and even

dogmatic writing manner Matthay discourages pianists from sitting "like a hunchback" arguing that this posture is not conducive to general health or issues of pianism. Again, his verbalisation of a technique to reach an ideal posture resembles that of many somatic methods "Freely and *easily* keep your body erect, or nearly so" (Matthay, 1932, p.110). This is an instruction supported by contemporary teachers and authors of somatic education aiming at musicians (Rosset Llobet & Fabregas Molas, 2007, p.19; Rosset Llobet & Odam, 2007, p.76).

Matthay's advice on keeping the body erect is a pioneering advice on a somatic issue that is described in conjunction with its immediate pianistic effect:

> Playing freely, with the constantly recurring relaxations of your upper-arm and shoulder, is likely to tempt you to *relax also the muscles that keep your body erect.* Have a care this does not happen. (Matthay, 1932, p.110)

The direct and apparent influence of somatic condition on piano performance, as already mentioned, is dealt with and recorded only in the last decades of the 20th century and increasingly analysed up until the present (Mark, 2003 pp.2, 3). Matthay advances a step further from his contemporaries and offers conditioning advice in a note on the previous advice:

> If you have fallen into this error, notice that the *pull* of the muscles and tendons that prevent your spine from collapsing can be felt at the lower part of your back. Make the necessary exertions there, and your body flattens out and rises from the stooping position (Matthay, 1932, p.111)

This conditioning advice, although brief, complies with modern Yoga instruction on sitting well, where emphasis is laid on the interrelation of movements of the spine and their impact on the sitting posture. (Lasater 1995, pp. 221-225).

In a separate chapter entitled "The Physiology of Technique" Matthay cites twenty-one principles on healthy application of his piano technique, which are an elaboration of the first basic principle: "The acquisition of any muscular habit, good or bad, is always a *mental* act" (Matthay, 1932, p.E7, Section 4). Matthay reiterated a tenet established and written by Alexander twenty-four years prior to Matthay's book:

"…the majority of people fall into a mechanical habit of thought quite as easily as they fall into the mechanical habit of body which is the immediate consequence" (Alexander, 1997 [1918], p.52).

The second principle complies with Pilates' views on the control of mind over body. Matthay advises that "You cannot teach your muscles to act rightly, you can only teach your brain to *direct* your muscles rightly" (Matthay, 1932, p.E7, Section 4). Pilates considers the state of the muscles obeying our will an ideal one and emphasises that "OUR WILL SHOULD NOT BE DOMINATED BY THE REFLEX ACTIONS OF OUR MUSCLES" (Pilates & Miller, 1998b [1945], p.10, capitals as in original)

Another important principle expressed through a combination of rules by Matthay is that of the direct orders to movement. This is an important issue raised by Alexander. In particular, Matthay writes:

> By no possible effort of mind can you *directly* actuate any muscle. You can only actuate a muscle by vividly imagining and *wanting* the required action or exertion OF YOUR LIMB. And you can only achieve free action of the limb by *wishing* its action to be free. Therefore do *not* try to think of the actual muscles used, or their locality. (Matthay, 1932, pp. E7, E8, emphasis as in original)

In a conceptual parallel, Alexander denounces direct actuation of muscles: "…in employing my technique, no attempt is made to gain specific results by *direct* means" (Alexander, 1997 [1941], p.536). He goes a step further in his investigations to discover that "…direct procedure is associated with dependence upon subconscious guidance and control, leading, in cases where a condition of mal-co-ordination is present, to an unsatisfactory use of the mechanisms and to an increase in the defects and peculiarities already existing." (Alexander, 1997 [1923], p.231 fn). He maintains that instead of a direct procedure one should apply the principle of "means whereby" which involves

> "…a reasoning consideration of the causes of the conditions present and an indirect…procedure on the part of the person endeavouring to gain the desired 'end'. This indirect procedure is that psycho-physical activity, associated with constructive conscious guidance and control and with the

> consequent satisfactory use of the mechanisms, which establishes the conditions essential to the increasing development of potentialities. Under these conditions defects, peculiarities and misuse are not likely to be present within the organism." (ibid)

A further proof that when referring to position Matthay realises that it is not sufficient to guarantee a flawless technique is the subtitle he gives to section 13 of the Epitome and Summary to his later book: "ON POSITION – *And Movement*" (Matthay, 1932, p.E46). Here Matthay reiterates a point made in his earlier book of 1903, namely that "Good Position is the *resultant* –but not an assurance – of correct *balance* in the forces you use". In the context of the subtitle in italics, the word 'position' takes on a different connotation and is an insufficient prerequisite for piano playing if movement is not present, a view also supported by Alexander Technique teachers and authors Weed (2004, p.27) and Nicholls (2008, p.5).

3.4.4 Harold Taylor 1979

One of the first attempts at synthesising principles of a somatic method with those of an established piano technique is Harold Taylor's manual *The Pianist's Talent.* As the subtitle suggests, this is "a new approach to piano playing based on the principles of F. Matthias Alexander and Raymond Thiberge". Although Thiberge (1880 – 1968) documented his views on the physiology and psychology of piano playing and taught many prominent pianists and pedagogues, Taylor was the only one of his students to have documented the elements of Thiberge's technique that fit to principles of the Alexander Technique, in which the author seems to have extended experience. This manual is quite unlike any of its kind, its contents making a first statement of the fact by not including an organised and categorised list of all the aspects of piano technique and body movements. On the contrary, Taylor focuses on conveying as intensely as possible the core of the techniques devised by the two great pioneers.

Taylor adumbrates his own work into three main ideological areas:

- deciphering talent and using his definition to elaborate on principles of piano performance;
- applying the principles of the Alexander Technique to the teachings of Thiberge in order to prove the naturalness of talent; and

- demonstrating application of his new findings to standard procedures of piano performance.

According to Taylor, talent is "the ability to perform without training, the amount of talent displayed being in inverse proportion to the amount of training required" (Taylor, 2009, p.14). Before giving a more precise definition of talent, Taylor construes fine piano playing as resulting from "fine co-ordination, a particular interaction of brain, body and keyboard which intrinsically precludes any mis-directed effort" (ibid, p.18). Consequently, Taylor considers his concise definition of talent: "the capacity for co-ordination" (ibid).

Co-ordination is then elaborated into its two components, namely, posture and the human body as indivisible entity (ibid, p.22). In other words, co-ordination is seen as being achieved through ergonomic and somatic considerations. In order to attach somatic importance to these two components, Taylor views posture and soma through the lens of the principles of the Alexander Technique and Yoga. The Alexander Technique is utilised for the interpretation of the word posture, namely, a dynamic process that goes further than the static understanding of position and encompasses the relationship of parts to parts as well as the balance of muscular activity. Yoga is called upon for its main philosophical foundation, namely, the unity of mind and body, which is pivotal for understanding co-ordination at the piano. Hence, Taylor's observation in relation to talent: "posture is therefore the key to the problem of talent" (ibid, p.25). Co-ordination is achieved through the expanding posture, a process that according to Taylor necessitates experience and cannot remain in the instructional context of a book. However, Taylor proceeds to elaborate the feeling of an expanding posture through experiments (rather than lessons).

In describing Thiberge's researches (ibid, pp.35-40), Taylor highlights ideas that were also discovered and explored by Alexander, such as the false presupposition that feelings are objective and reliable; the role of pre-conceived notions in the observation of the individual's conditions; the false assumption that relaxation, suppleness, stiffness and freedom have a purely muscular basis; the importance of not interfering with oneself before and while attempting any external activity; the necessity to re-educate in order to establish normal function.

The act of sitting at the piano is given great importance by Taylor (ibid, pp.43-50), who manages to convey a synthesis of his own on the important principles on sitting based on the teachings of Thiberge and Alexander. Therefore, he covers the issues of ergonomics, gravity, balance, muscular condition (relaxation/tension), mental orders, untrustworthiness of feelings, the power of will and the principle of trusting in the process while caring for the means whereby an activity will be attained rather than end-gaining, or going straight for the goal. In a later chapter Taylor adds to these freedom and flexibility (ibid, pp.74-79).

Taylor elaborates on co-ordination in a chapter entitled "Co-ordination with the keyboard" (ibid, pp.53-60), this time juxtaposing ideas of his two main mentors with those of great pianists James Ching, Tobias Matthay, Arthur Rubinstein, George Woodhouse and Otto Ortmann. The author then introduces the pianistic principles of Thiberge such as "*la pression*", "*fourche de cheval*" and "correct alignment of the segments of bone structure in a condition of balanced muscular activity" all incorporated in a brief piano lesson, which, according to Taylor (and, effectively, Thiberge), is the only technique lesson that a pianist actually needs. To this, Taylor offers an additional chapter dedicated to the use of the thumb, where he highlights the importance, independence and multiflexibility of the thumb and suggests that the ideal and most suited lesson is "an Alexander lesson in miniature" (ibid, p.81).

The last two chapters of Taylor's book cover principles of application of his proposed method to some Chopin études as well as a more global outlook on interpretation and performance (ibid, pp.86-106), where Taylor considers the close connection between somatics and art: "As mind and body go hand in hand, so do art and technique" (ibid, p.104). However, as the author regularly points out the necessity for a hands-on experience from an experienced teacher, this cannot be considered a structured and systematic method, at least not for the average piano student or teacher. It is rather a discovery that motivates pianists and teachers who have extensive experience in the Alexander Technique and a pianistic training in the Thiberge schooling to re-consider their views and perhaps use it as a philosophical basis to their teachings.

3.4.5 Gyorgy Sandor 1981

One of the most comprehensive textbooks of the pre-internet era is Sandor's *On Piano Playing, Motion, Sound, Expression* in which he dedicates a whole chapter to general somatic aspects, *The Human Performing Mechanism*, before delving into the intricacies of technique. He introduces the chapter with the somatic acknowledgment of the totality of the human body which he considers indispensable in creating musical sounds (Sandor, 1981, p.16). Vehemently opposed to muscle fatigue, Sandor is a proponent of the cultivation of intelligence and coordination of the playing apparatus in lieu of muscle exercise aimed at strengthening, which he considers irrelevant to the task of piano playing. Innate coordination is considered the natural prerogative of children who can play effortlessly, a prerogative which is not apparent in adults, who have most likely lost their coordination. To prove his point on the anti-pianistic value of fatigue in practice, Sandor claims that it is the long-term mechanical repetition of piano exercises that eventually deprives pianists of their natural coordination (Sandor, 1981, p.17). Alexander demonstrates the issue of quality of movement as opposed to mindless repetition: "…no system of physical exercises will alter the present condition of the subject…since all exercises will be conducted under a primary misconception with regard to the use of the muscles involved in the re-adjustment and co-ordination of the organism" (Alexander, 1997 [1918], p.119). Another important clarification is made by Sandor with respect to tension and relaxation: "When the larger muscles are mobilised, the effort required to play the piano will be distributed in such a way that the necessary expenditure of energy will hardly be felt or seen. May I emphasise here that this extreme reduction in energy must not be mistaken for "relaxation". It is a simple matter of utilizing muscles so expeditiously that hardly any effort need be used" (Sandor, 1981, p.18). The exertion of the necessary amount of effort, no more and no less, in a given activity is also propounded by Weed in his explanation of the value of "ease of motion" in the application of the Alexander Technique (Weed, 2004, p.31). Sandor disagrees with the concept of complete relaxation, which he considers ineffectual, and suggests instead the cessation of stiffness (Sandor, 1981, p.18). Alexander likens relaxation with total collapse or with the collapse of specific muscles which occurs with a resultant overaction of other muscles (Alexander, 1997 [1941], p.538 fn). Sandor proceeds to give a simple yet concise description of the structure

and function of the muscles again vehemently opposed to the buildup of muscle endurance at the expense of cultivating coordination in playing any instrument (Sandor, 1981, p.20).

An important somatic element is touched upon by Sandor, namely that of the intensity of music in relation to muscular tension. He supports that pianists need to moderate the desire to tense their muscles in order to express intensity in music and warns against the dangers of muscular tension as a result of a desire for stage and musical dramatisation (Sandor, 1981, p. 29).

The contribution of the movements of the whole body is given due importance by Sandor: "The constructive role of the body muscles is to accommodate the arms while helping to keep the body in a mobile but secure condition" (Sandor, 1981, p.30). This view is then elaborated and somatic issues are categorised according to different areas of the body, (the torso, the chest and back muscles, the diaphragm, the feet) according to the condition of a pianist's body (stability, mobility, equilibrium) and according to ergonomics of piano playing (sitting position, white and black keys, the bench).

Sandor's views are all-encompassing in terms of knowledge carried along by his predecessors, whether on a pianistic or a somatic level. However, a remarkable distinction is apparent in his criterion for correct or incorrect ways of performing movements. He considers the following factors:

- Idiosyncrasies of the pianist's anatomy
- Differences in sizes and spatial distribution in pianos and benches
- The need for movement alertness and constant adjustments of muscular conditions
- The importance of equilibrium both in terms of tension/relaxation and movement choreography (left/right/front/back)
- Idiosyncrasies of the pianist's neuromuscular coordination and reflexes.

Sandor places ease and comfort above all parameters of movement and concludes the chapter with a paragraph which is somatic in all its aspects:

> Ease and comfort have priority over everything else because unless the body is well balanced and supported, the diaphragm and other body

> muscles must tense up; tension in these muscles affects our breathing and technique, and while this handicap is hardly visible, it certainly takes its toll. During the countless hours that we spend practicing, any unnecessary activity adds up to a formidable expenditure of precious energy. We must be adamant in avoiding and correcting this pitfall of tensing up our muscles. Furthermore, continuous inner muscular tension is quite habit forming and damaging. (Sandor, 1981, p.34)

This paragraph sums up all the rules of good use whether by somatic pioneers or advanced performing arts medicine experts. In particular, Langford (1999, p.210) proposes that comfort is a prerequisite for people whose professions demand hours of sitting, while Bruser (1997, p.87) emphasises the element of dynamic balance rather than the static perception of posture. Vineyard (2007, p.204) distinguishes the concept of balance from the effort of stillness and maintaining a fixed position and explains that "balance means maintaining a condition throughout the body that is best characterized as having *a maximum potential for movement while using a minimum of muscular effort*" (emphasis as in original). This is a view also supported by Caplan (as cited in Bruser, 1997, p.68) and Langford (1999, p.41) who considers proper use of the muscles to be the result of "*minimum effort appropriate to the task*" and claims that "a performer who achieves economical support of the main structures of the body can undoubtedly command more freedom and agility in small precision movements" (Langford 1999, p.208) which also justifies Sandor's view on support.

3.4.6 Dorothy Taubman 1995

The work of piano pedagogue Dorothy Taubman is presented through a series of 10 DVDs (Taubman, 1995, 2003). This analytical and individual approach is the result of Taubman's experimentations and her study of work by her predecessors such as Otto Ortmann and Tobias Matthay as well as contemporary findings in performing arts medicine (Taubman, 1995, DVD 1, 01:28:54). This approach is somatic in its consideration of pianistic issues as its proponents vehemently oppose isolation both on a physical and expressive level (Taubman, DVD 2, 1995, Lecture 2; DVD 10, 2004). In the DVDs, Taubman teaches in the form of a masterclass, while her protégé and main proponent of the approach at present, Edna Golandsky (Golandsky Institute, 2011) presents and demonstrates all the various technical aspects of piano playing in a

structured fashion. The principles of the approach are read out by Golandsky as quoted by Taubman in her unpublished notes.

Taubman's pedagogical approach to the development of students' understanding of movement is based on intellectual stimulation in order to inspire an awareness of "what works for them" in order to avoid physical injuries (DVD1, 01:08:40). This is an essential characteristic of the first-person somatic perspective (see Chapter 2.1) and, according to Taubman, can be achieved through scientifically informed procedures (DVD 1, 01:08:40).

Taubman argues that pain should never be experienced in any circumstance. Signs of pain of any kind are indicative of a faulty utilisation of the body parts directly or indirectly linked to the playing apparatus (DVD 1, 01:07:51). This is in agreement with Yoga for Musicians, where in practising constructively pain should be addressed and managed through mindful adjustments (Olson, 2009, pp.41, 119).

In talking about repetitive strain injuries and occupational syndromes throughout history, Taubman argues that these are a result of misuse rather than overuse (DVD 1, 01:25:03), a view supported by Alexander who states that misuse can bring about strain and waste of energy (Alexander, 1997 [1941], p.521).

Described as a co-ordinate technique, the Taubman approach aims for "minimum effort for maximum result" (DVD 3, 01:13:48) and teaches a manner of movement not muscular development (DVD 1, 01:09:18). These movement principles show a close affinity to the views of teachers of the Alexander Technique (Langford, 1999, pp.41-43; Weed, 2004, pp.49-66).

Taubman states two significant features of co-ordinate playing: 1) the playing apparati function maximally under no strain, and 2) the playing apparati must "work together as a unit" (DVD 1, 01:08:47). Although this is a holistic consideration, it focuses on the movements of fingers, hands and arms. This is further elaborated by Taubman's ergonomic considerations: "we also have to know how movement is produced and that all movement is based on the leverage system" (DVD 1, 01:27:43). Taubman

stresses the importance of fulcrums and their determinative role in comfortable and fast piano playing (DVD 1, 01:28:45).

In discussing alternative possibilities that deviate from middle range, Golandsky emphasises the domino effect of tension that builds up from the fingers throughout the playing apparatus and as a result the rest of the body. Her main objective is to find the cause of a symptom and not to cure the symptom *per se* (DVD 1, 01:38:53).

Golandsky explains that the criterion for sitting position at the piano in the Taubman approach is that the elbow should be in line with the white keys. She demonstrates how the height of the piano stool is determined by the length of the upper arm in order to comply with this criterion, the ultimate purpose being the unification of the fingers, hands and arms (DVD 1, 01:31:18).

Regarding the general sensation of the sitting position at the piano, Golandsky describes and demonstrates two different approaches:

- The position of unrest, which is caused by incorrect ergonomic proportions between the instrument, the stool and the body and creates an upward tension in the whole body, no sense of contact with the keys and the need to clench on the keys.
- The condition of correct balance, where one is resting down without depressing the keys. This is achieved with a subtle and sensitive contact with the keyboard which is described as "holding lightly" on the keys whilst "resting down without holding up". (DVD 1, 01:33:03)

Alcantara attempts to clarify the concepts of tension and relaxation according to the Alexander Technique in a way that defies common understanding of these concepts. Nevertheless there is an agreement in the theoretical elaboration of the two concepts between Alcantara and Taubman (Alcantara, 1997, pp.14-16). Golandsky expresses the Taubman approach to tension and relaxation and balanced movement as follows: "when we move we never think of fixating; we're not relaxed either because there are muscles that are going to be working to move us. But when we move properly and freely and there is no tension, one muscle is active and the opposing muscle has to be

passive" (DVD 1, 01:46:16)… "our philosophy [is that] we should learn to move in a way where there is nothing to relax from. A relaxation often makes the problem much worse rather than ease it" (DVD 1, 02:01:14).

The premise of the Taubman approach is somatic in considering piano technique as part of a unified physical process. Taubman has reached the level of correct diagnosis through detecting fine movements that are often invisible (DVD 1, 01:09:43). Her method of analysing technique can be summed up in her argument that "the study of piano technique is a study of motion" (DVD 1, 01:09:15). However this revolutionary approach to piano playing addresses somatic issues as and when needed in piano technique and not in conjunction with instruction on understanding the functionality of the whole body.

Milanovic (2011) examines the learning and teaching processes in the Taubman approach in what is the only significant written document on this approach so far. In it, she juxtaposes the similarities and differences of the Taubman approach and whole-body approaches with a specific emphasis on the Alexander Technique (Milanovic, 2011, pp.52-55). While the Alexander Technique provides musicians with sufficient awareness and kinaesthetic tools, it cannot provide them with tools for the intricate analyses of movement required in piano playing (Stewart 2011, as cited in Milanovic, 2011, p.53). Although the authentic videos by Taubman (Taubman, 1995, 2003) did not include thorough and detailed somatic instruction, Milanovic has detected the following similarities in the concepts and ideas of Dorothy Taubman and F. Matthias Alexander:

- Both pioneers investigated their whole use in order to improve specific physical action
- Both techniques focus on general improvement as a prerequisite for specific improvement
- Neither of the pioneers received specialised medical training yet solved problems that the medical community was often unable to solve
- Both pioneers advocated the need to learn what not to do as well as replace old faulty movement habits with new ones

- Neither Taubman nor Alexander believed that mastering anatomy and physiology would resolve their respective issues
- Both were adamant in arguing for their beliefs uncompromisingly
- Both were sceptical on the idea of their work being disseminated by other teachers

The combination of the Taubman approach with whole-body disciplines is a new consideration embraced by the present exponent of the Taubman approach, Edna Golandsky (Milanovic, 2011, p.55), and is yet to be organised and structured within a piano teaching curriculum.

3.4.7 Madeline Bruser 1997

The Art of Practicing [sic.], although aimed at all musicians, is a comprehensive and structured method devised by pianist Madeline Bruser. Bruser's somatic pedigree is apparent from Menuhin's foreword:

> Madeline Bruser has much to contribute toward the practical, psychological, and spiritual approach to productive practicing. So often it is regarded as penance when it can be an exhilarating and rewarding effort. This book will contribute directly to this result. (Bruser, 1997, p.xiii)

Bruser's own description of the method confirms the somatic affinity to the theoretical and philosophical foundations of her work:

> The Art of Practicing is a step-by-step approach that integrates movement principles with meditative discipline, which consists of focusing on sounds, sensations, emotions, and thoughts in the present moment. (Bruser, 1997, pp.3, 4)

The structure of her method begins with the consideration of the self, the first-person perspective and the psychosomatic idiosyncrasies of music practice and performance. She then proceeds to a ten-step approach of introducing the intricacies of musicians' physical and mental values and concludes with a spiritual and existential exploration which justifies and re-instils musicians' original enthusiasm and desire for music making.

The thematic areas covered are: Philosophical considerations of a music performer; Psychological and ethical considerations in a musician's life; General and specific movements in relation to playing an instrument; Awareness in the practice environment; Emotional consideration as related to interpretation and practice; Physical and mechanical considerations of a music performer; Mental discipline in applying healthy practice habits; Psychological obstacles in music making; Enhancing perceptive and cognitive skills in music; Musical expression in relation to physical and mental perception; Kinaesthetic awareness in relation to musical interpretation; Memorisation techniques and Spiritual consideration of music making. More specifically, Bruser introduces practice theories that can be considered in parallel with somatic principles of better results through less effort (Bruser, 1997, p.3) as seen in Weed (2004, p.31) and Langford (1999, p.41). Vulnerability is proposed as an essential value of a musical personality (Bruser, 1997, pp.8, 9) and the proposed techniques for accepting this vulnerability comply with Iyengar's approach to the Yogic state of samadhi, which requires complete acceptance (Iyengar, 2008. p.53). The principle of resisting the end-gaining of a goal as explained by Alexander (1997, pp.231, 444, 473, 528) is indirectly approached by Bruser (1997, p.13) as the overeager want for achievement which in itself becomes a hindrance to a pleasurable artistic outcome. Bruser (1997, pp.15-25) examines the negative effects of the struggles that music performers face and proposes tactics, techniques and approaches whose foundations can be found in the yogic understanding of kaivalya or freedom of emancipation (Iyengar, 2008, pp.48, 49).

Her approach to musicians' physical issues (Bruser, 1997, pp.29-136) reveal an affinity with somatic principles of Yoga and the Alexander Technique as well as movement routines based on stretching, athletic maintenance and performing arts medicine. She has thus collected and synthesised material from somatic and other areas related to instrumental teaching and to musicians' well-being, including the Alexander Technique, Performing Arts Medicine, Buddhist and Shambhala meditation, physiotherapy, behaviourial psychology, adult education and Dalcroze Eurhythmics. She has also drawn from her experience as a meditation practitioner and concert pianist to present a cohesive and all-encompassing guide to the practice and performance of music.

3.4.8 Seymour Fink 1999

Fink's method displays a multiplicity of somatic considerations. He regards his book *Mastering Piano Technique* accompanied by a DVD to be a "process of training your mind to develop and control your body". Although the book is organised and structured around his thorough, detailed and analytical approach to piano technique he never ceases to promote basic somatic principles like co-ordination, physical awareness and kinaesthetic insight throughout this work.

The whole approach elaborates on movements of the body and their relation to pianistic technical movements. This approach discourages both mental and physical isolation often linked to pianistic thinking and encourages a somatic consideration of even the most miniscule finger movements.

Exploration of different approaches plays an important role in Fink's pedagogical philosophy, as does the recognition that there is no one correct playing manner (Fink, 1999, p.11). On this premise, Fink argues for the importance of biomechanics and quality of movement as a prerequisite on which to build a healthy technique. In addition, Fink juxtaposes more specific somatic principles and procedures, which prepare the ground for his method (ibid, pp.11-12):

- Posture
- Efficiency of movement
- Habit formation
- Learning strategies
- Coordination
- Instrumental mechanics
- Increased awareness
- Good use of the body
- Adaptability

Priority in this work is given to the education of the body (ibid, pp.13-14) and Fink promotes Alexander's approach in the following remark:

> The body must first be taught to establish and maintain excellent posture, creating the efficient skeletal alignment that promotes economical, balanced muscle use. (ibid, p.13)

Alexander (1997 [1923], p.358) opposes specificity in the education of children, claiming that even though they may exhibit specific development in movement, if this is not the result of a development of the mechanism as a whole, then they will show "psycho-physical defects and imperfections". In emphasising the importance of prioritising information in teaching, Alexander states: "re-education on a general basis must precede any attempt at specific re-education" (ibid, p.359).

Fink proceeds to explain this prioritisation in educating piano students as starting from movements of the larger members of the body involved in general posture, to gradually smaller areas such as movements of the shoulders, arms and only then hands and fingers (Fink, 1999, p.13).

Fink also lays emphasis on the somatic principle of unification of mind and body (see Chapter 1) in the learning process as the only way to the natural expression of musical imagination.

In establishing a general somatic consideration, Fink commences his somatic instruction with the aid of a mirror and follows a series of fundamental postural movements that are more closely related to the philosophy of Joseph Pilates (Fink, 1999, p.22). Observation is, thus, based on body centering (*sic*), symmetrical development of the body and intelligent comparison (Reyneke, 2002, pp.65, 210-213). Fink's advice upon realising an imbalance also alludes to the Pilates Method, namely, the expenditure of additional effort on the weaker side in order to re-establish bilateral uniformity and balance in the body (Fink, 1999, p.23).

According to Fink (1999, p.24) postural alignment is considered a primary movement and his instructional approach is an amalgam of somatic elements deriving from the Alexander Technique, the Pilates Method and Yoga. It is elaborated in the following three steps:

> 1. Release (relax) the muscles of the back of your neck to allow your head to move and balance forward and upward, creating a sense of space between it and your body.

According to Alexander, the condition of the neck indicates the level of adequacy of the controlling mechanism of a human being (Alexander, 1997 [1918], p.79). Nevertheless, an attempt to relax one's neck in a direct manner goes against Alexander's principles for numerous reasons, the most relevant to this application being that a direct attempt to relax the neck will not be successful if it is not preceded by a "satisfactory co-ordinated use of the mechanism" (Alexander, 1997 [1923], p.310). Priority over a mere order for relaxation of the neck should be given, according to Alexander, to the inhibition of the desire to stiffen one's neck (Alexander, 1997 [1923], p.310). However, direct orders from the mind to the body for a relaxation of the neck and its musculoskeletal benefits are increasingly common in the instructional bibliography of the Alexander Technique (Langford 1999, pp.91-98; Nicholls, 2008 p. 42; Brennan, 2004, p.73).

Fink's instruction on the condition of the torso seems to depict principles of the Pilates Method:

> 2. Feel your torso lengthen following your head upwards as the curves of the spine elongate. While moving upward, avoid augmenting natural lower back sway by releasing (widening) the lower back muscles and gently contracting the lower abdominal muscles.

Elongation of the spine and abdominal contraction used as direct instructions as well as general approaches to body conditioning are principles adopted by modern Pilates instructors (Menezes, 2000, pp.42, 43; Robinson & Fisher, 1998, pp.116, 117). In addition to the gentle abdominal contraction, Herdman and Selby also provide the learner with a similar kinaesthetic direction to that used by Fink, "Feel as if the top of your head is attached to a piece of string that is pulling it away from your body, lengthening out your neck and spine." (Selby & Herdman, 1999, p.20).

Fink's next instruction complies with the Yogic understanding of shoulder position:

> 3. Release your shoulders to fall downward and outward to the sides. Your shoulders will find their correct position automatically once the torso-neck-head alignment is established and balanced. The ideal shoulder notch is slightly forward of the sides with the shoulder blades comfortably spread. Your spine will feel as though it is stretching upward your shoulder girdle which has been released (widened outward) in response to the force of gravity.

B.K.S. Iyengar often insists on the downward placement of the shoulders accompanied with correct spinal alignment (e.g. Iyengar, 2008, pp.69-71). This view is also supported by his student and eminent Yoga teacher and physiotherapist Judith Lasater (Lasater, 1995, pp. 223, 224) and by Yoga instructor and trainer, Christina Brown (Brown, 2006, pp.46, 47).

Fink's somatic instructions comprise a variable amalgam of the philosophies of the three somatic education methods analysed in this research. Although on a somatic level this amalgam may result in a dubious set of information to a piano student, this is undoubtedly a thorough attempt to alert pianists' attention and interest to issues of somatic education.

3.4.9 Thomas Mark 2003

The title of the book (and its accompanying DVD) *What Every Pianist Needs to Know about the Body* attests its relation to somatic education and renders this the most specialised document/method of learning the intricacies of the body in relation to the piano (Mark, 2003). Mark's textbook and method are based on the initial book by Barbara and William Conable entitled *What Every Musician Needs to Know about the Body*.

The theoretical foundation of what has now become a series of instructional books, each aimed at particular instruments and the voice, is based on the concept of Body Mapping, an educational process devised by William Conable, a professor of cello and teacher of the Alexander Technique. Conable defines Body Map as "one's self-representation in one's own brain. If the Body Map is accurate, movement is good. If the Body Map is inaccurate or inadequate, movement is inefficient and injury-producing" and "Body Mapping is the conscious correction and refining of one's

Body Map to produce efficient, graceful, and coordinated movement" (Conable & Conable, 2000, p.5).

According to Conable (as interviewed by Robert Rickover, online) Body Mapping originated during his apprenticeship with Marjorie Barstow, a master teacher of the Alexander Technique and F.M. Alexander's first student to graduate from the first teacher training course in 1931. Barstow considered the understanding and accurate definition of body parts as paramount while in the process of learning and teaching the Alexander Technique. Conable adopted this concept and elaborated it into an educational process aimed at musicians and organised to promote healthy and efficient movement according to musicians' understanding of their structures. Therefore, the processes taught in *What Every Pianist Needs to Know about the Body* are somatic in their foundation (as linked to the Alexander Technique) and pianistic in their specialised development (as elaborated by pianist Thomas Mark). Mark's method is presented in the form of a book, a DVD and themed masterclasses. The process of Body Mapping is a training process which is gradually gaining ground in all instrumental and vocal areas; it is taught systematically and the originators have devised a training programme for music teachers, performers and teachers of the Alexander Technique (Body Mapping, online).

Mark (2003) covers all somatic areas concerning piano playing and specifically:

- The philosophy of movement
- Intellectual and kinesthetic perceptions of piano playing
- Kinaesthesia in relation to music imagination
- Precise yet simplified anatomical analysis of the whole body
- Distinction between posture and balance
- Structure and function of movement
- Structure and function of the piano
- Principles of injury prevention

Mark's book deals solely with the somatic aspect of a pianist without aiming at elaboration of pianistic interpretation or technique. This fact places his method in a new area of piano instruction which indirectly and ultimately aids technique and interpretation but is not in itself a comprehensive piano method.

3.4.10 Barbara Lister-Sink 2005

In her instructional DVD, Barbara Lister-Sink (2005) introduces the theory and practice of her own method, which is based on her experience as an injured and rehabilitated pianist, analysis of the mechanisms of the piano, analysis of the mental and physical mechanisms of the body and the amalgamation of all of this knowledge into an integrated, somatic piano method. In doing so, she propounds the necessity of defining piano technique based on a somatic understanding of the body in piano playing. As part of this somatic understanding she employs knowledge from the area of biomechanics and the Alexander Technique. Throughout the introduction to the method, the hands-on methodology of conveying information is emphasised.

Good technique, according to Lister-Sink, is found in all areas of specialised movement such as sports, recreations and performing arts. Quality in piano playing is considered a result of neuromuscular coordination which Lister-Sink sets out to analyse in all of its components. She defines piano technique as "the best coordination of our bodies while we play the piano" (track 1, 7:51).

The prerequisites for the achievement of well coordinated piano technique are optimal skeletal alignment and efficient muscle use. Optimal skeletal alignment is achieved through the theoretical and practical teaching of the structure and function of the skeleton. Skeletal alignment is considered in relation to sitting at the piano and all the areas of the skeleton are examined as to their conducive role for optimum support. Optimal skeletal alignment saves the muscles from overworking and provides a stable ground for free movement, therefore it is essential for freedom in piano performance (track 4).

Biomechanics of the body in relation to the piano are examined as the means to exerting as much energy as needed for each movement. Importance is given to the body proportions in relation to the piano, the distance of the body from the keyboard and the height of the piano stool. These considerations are also made according to the style of music played, where heavy romantic repertoire may need different

biomechanical analogies from lighter passage work characteristic of the baroque repertoire (track 4).

After having considered the body as a whole, Lister-Sink proceeds to examine skeletal arm structure and function. This is done through correct body mapping of the areas where the arms meet the torso and through principles of good movement quality. (track 4, 6:44). The anatomy of the hand and arm is seen from the point of view of alignment as well as functionality through the connection of movement guided by weight.

The second prerequisite for well coordinated piano technique is efficient muscle use, which is defined by Lister-Sink as "using the right muscles with the right amount of effort at the right time" (track 5). This principle is examined in conjunction with the mechanism of the piano and the forces needed for the piano to function optimally.

A special section is dedicated to the causes of lack of comfort and injury in piano playing. Increasing and maintaining muscular effort in piano playing is considered as the main reason for loss of both mental and physical freedom. The solution is seen in the instantaneous release of any muscular effort needed (track 5).

Emphasis is given to the role of neuromuscular programming in piano playing. The directions from the mind to the neuromuscular system are determinative of injurious or free piano playing. Forgetting to switch muscles off is the main reason for most piano related musculoskeletal injuries. Lister-Sink offers three steps for removing muscular tension and avoiding recurring injuries:

1. attaining consciousness of the condition of tense muscles
2. regaining conscious control of the tense muscles
3. understanding and putting to constructive use the kinaesthetic sense of good muscular condition

The tool used for implementation of these three steps is kinaesthetic awareness. In order to learn healthy piano playing Lister-Sink argues that one must be "trained in the way it feels".

The final step before introducing the purely pianistic aspects of this method is a set of exercises for the development of a somatic understanding of the body and the discovery of internal movement. In these exercises, Lister-Sink demonstrates all of the theoretical principles analysed (track 6). The demonstration takes the form of a guided teacher-student situation where the particulars of each exercise are explained both through the correct and wrong performance. These exercises are explorative and aim at the student's experiential understanding of basic principles such as arm balance, mobility of joints, weight distribution, mapping the arms, controlled contraction and relaxation and finding optimal alignment (Lister-Sink, 2005).

Summary and conclusions

Somatically speaking, Couperin's three-century-old treatise is the most original of all texts examined in the present chapter. Couperin prepared the ground for a non-dualistic understanding of the role of the keyboard player, proposing simple yet succinct advice on the manner of execution, the psychology of performance and, as a result, the holistic understanding of movement.

Breithaupt's idiosyncratic texts introduced ideas that were diametrically opposed to the finger isolation of the 18th and 19th centuries. They offer fertile ground for scholarly debate with regards to his scientific and technical theories. At the same time, Breithaupt's texts are pioneering in their explorative spirit of the artistic, physical and emotional nature of the pianist.

Matthay may well be the first pianist and pedagogue to discover the somatic connotations of the functions of a human being as a pianist. The inclusion of mechanical, ergonomic, physiological and psychological considerations in the understanding of piano performance is proof of Matthay's contribution to the area of holistic piano playing and somatic education in general.

The findings of Taylor, Fink, Mark, Sandor, Bruser, Lister-Sink and Taubman in the area of piano performance have resolved many previous somatic misunderstandings, elevated the levels of practical application stemming from theoretical principles and begun the establishment of holistic pianism in the second half of the 20th century and

beyond. Their methods and tenets set their work apart from the previous attempts to describe and convey pianistic views on movement, due to their somatically informed understanding which came as the inevitable result of the post war era of global dissemination of knowledge and the increasing acceptance of interdisciplinary practices. As compared to the bibliography on somatic methods examined in Chapter 2 and its relevance to piano performance, modern piano methods examined in this chapter reveal a surprisingly high standard of somatic information. The progress of holistic approaches of piano playing has doubtless found many opponents throughout the centuries up to and including the present day. One only needs to take a closer look at present piano instruction at conservatoire level to confirm this.

The limitations that presented themselves at the beginning of this research study suggested that there is lack of an organised, comprehensive and globally acknowledged approach to piano instruction. However, the literature which analyses methods of somatic education and their relation to piano performance, in combination with the textbooks examined in the present chapter which consider piano performance more holistically, reveal that there is abundant information on the potential effects of somatic education on piano performance. Therefore, the next step taken in order to answer the remaining research questions and to discover empirically the impact of somatic education on piano performance is one where a synthesised and comprehensive exposure of pianists to general principles of somatic education will be explored, recorded and analysed.

In the next chapter, the methodologies used in this research will be reviewed as to their suitability for the present study. I will also elaborate on the theoretical basis of the Somatics for Pianists© workshops, the pedagogical techniques used for the delivery of information relating to somatic education as adapted for pianists and the theoretical and practical material applied in these workshops which aimed to awaken pianists to a different way of thinking.

Chapter 4 Methodology

This chapter includes a review of my aims, research questions and methodology theories on which I based my research, and their suitability to the research aim. In addition, this chapter includes a discussion of the population and sample, the research tools and the processes followed for the design of these tools.

My main aim in this thesis as mentioned in the Introduction is to evaluate the application of principles of Yoga, the Pilates Method and the Alexander Technique to piano performance in a structured and systematic manner. A secondary aim of this project is to engage with questions of problem-free piano performance in a holistic manner.

My personal exposure to problem-free piano methods and somatic methods came as a result of a performance related musculoskeletal injury. After having resolved my personal pianistic and physical issues I proceeded to receive specialised education in both fields (piano performance and somatic education). The account of my personal investigations as presented in Chapter 1 is the outcome of a retrospective reflection on my exposure to somatic education and the effects this had on my own piano performance. This account revealed the limitations in the area:

- Lack of a synthesised and systematic approach that will educate pianistically as well as holistically
- Lack of critique and monitoring of the health impact of existing approaches
- The existing methods in fields of both somatic education and piano performance are not yet globally accepted as part of music curricula
- Each somatic method contributes idiosyncratically to learners as does each piano method
- The majority of piano instruction in the western system is not in full synchronisation with the academic advances in the field of performing arts medicine

In an attempt to approach problem-free piano performance in a holistic manner the following questions presented themselves:

- Which of the studied body-mind approaches can be considered as somatic education methods?
- What is already known in the literature of somatic education regarding problems of performing artists and pianists in particular?
- What is already known in the literature of piano performance regarding a holistic consideration of pianists?
- To what extent are pianists exposed to somatic education?
- What kind of educational delivery is most appropriate for exposure of pianists to somatic education?
- At which level of their education are pianists more open to receiving and accepting somatic information?
- Which components of piano performance can benefit from somatic education? (e.g. general components such as practice, teaching, interpretation and specific components such as memorisation, stage fright, technique, etc.)

I approached this journey based on the following theoretical axes as explored in Part I: Somatic Education as the wider field which includes, amongst others, the Pilates Method, Yoga and the Alexander Technique, and approaches to Piano Performance as expressed through practice, teaching and interpretation of somatically informed piano pedagogues.

As presented in the reflective account of my personal investigations (Chapter 1) the driving force for the whole research project has been the quest for a solution, explanation and analysis, in other words, a truth in my personal experience. Seeking for a truth is considered a driving force for research (Cohen, Manion & Morrison, 2007, p.6) and research in its turn is defined by Kerlinger (1970, as cited in Cohen, Manion & Morrison, 2007, p.6) as "the systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among natural phenomena". Figure 4.1 shows my journey from a personal experience of injury to a quest for finding a truth both on therapeutic and educational levels through further training in specialised piano methods and in three different somatic methods, which led to a more detailed research on available literature in parallel with organisation of workshops on somatic education for pianists, and culminated in the collection of data

from interviews and questionnaires and research conclusions regarding the impact of somatic education on piano performance.

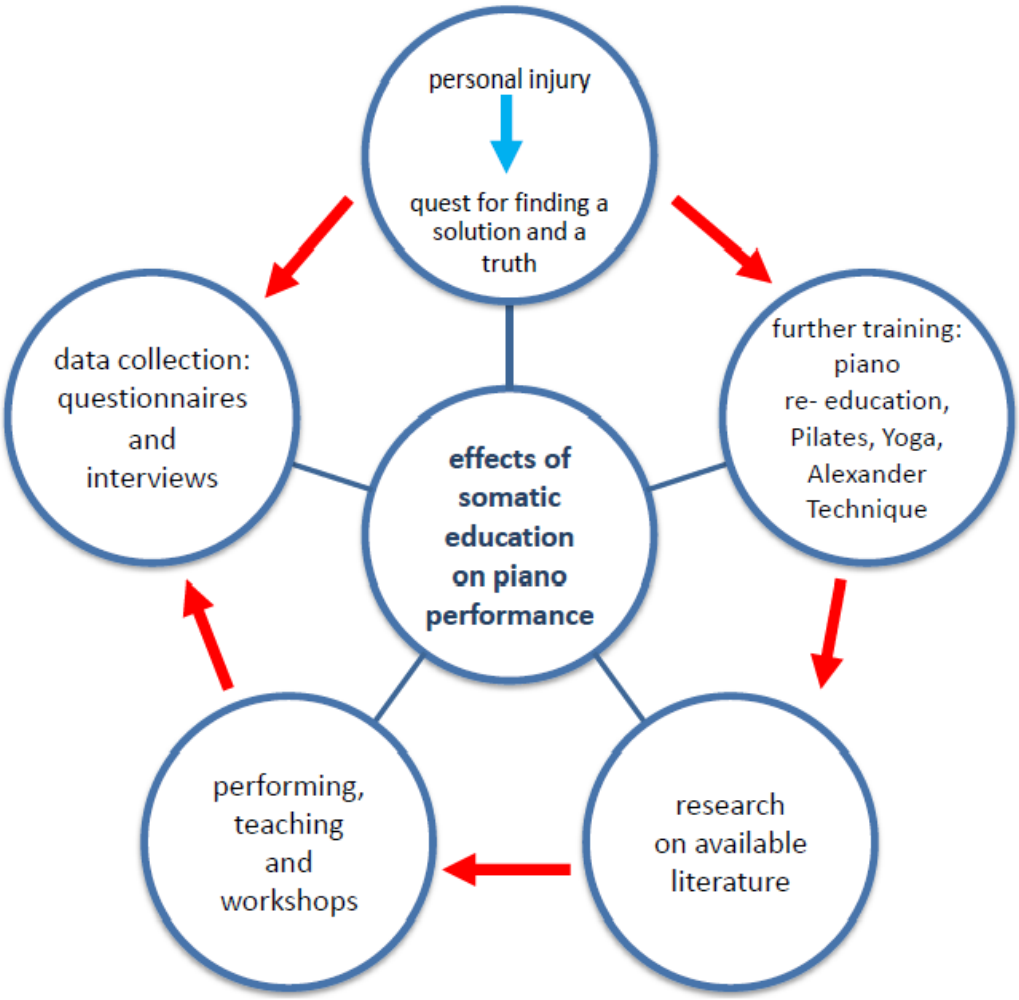

Figure 4.1 Research journey

4.1 Choosing an appropriate methodology

This stage of the research sets out to reveal the theoretical and practical foundations as used in the service of answering my research questions. The choice of methodology demands identification of the nature of research, the general theoretical stances adopted for this particular project and the comprehensive character of my attitudes in following the research process.

The in-depth study of the field of Somatics revealed the ideological premise of the first person perspective that formed me as a researcher. In order to embrace the somatic paradigm philosophically and apply it to the present research, I turned to methodologies that inform the first person perspective and in particular followed the prototypes set by Cohen et al, 2007. Therefore, interpretation of phenomena from the inside was informed by phenomenology and ethnomethodology (see § 4.1.4), while the recording of experience and reflective accounts was informed by action research methodology (see § 4.1.7). These methodologies created a foundation for the later practical application of the research processes followed in this research.

The research methods employed within the frame of phenomenology, ethnomethodology and action research methodologies were mainly qualitative in their nature (see § 4.1.3 and § 4.1.5). Consequently, the techniques, processes and tools used focused mainly on recording experiences (see § 4.1.5) and, where appropriate, some quantitative techniques were utilized.

4.1.2 Research theoretical process. Ontological and epistemological assumptions.

According to Hitchcock and Hughes (1995, p.21 as cited in Cohen, Manion and Morrison, 2007, p.5), "ontological assumptions give rise to epistemological assumptions; these, in turn, give rise to methodological considerations; and these, in turn, give rise to issues of instrumentation and data collection." According to Burrell and Morgan, "there are assumptions of an ontological kind – assumptions which concern the very nature of essence of the social phenomena being investigated…" and "…assumptions of an epistemological kind which concern the very bases of knowledge – its nature and forms, how it can be acquired and how it can be communicated to other human beings" (1979, as cited in Cohen, Manion and Morrison, 2007, p.7). My personal ontological assumptions led me to explore and investigate the impact of somatic education on piano performance, while my epistemological assumptions directed me to finding and testing that impact on the target population.

4.1.3 Combination of qualitative and quantitative methods

Although some quantitative methods are applied in part of this research, the particularities of the circumstances and the sample as well as the tools necessary to conduct it are more suited to qualitative methodologies. According to Bresler and Stake (1991, p.3), certain characteristics of qualitative research include the use of triangulation for better validity and emphasis on analysis and recording of both emic and etic issues. These characteristics offer a fertile ground for observation and examination of the influence of somatic education on piano performance through a wider palette of research tools. They also state that "in actual life, no research study is purely qualitative or quantitative. In each qualitative study, enumeration and recognition of differences in amount have a place. And in each quantitative study, natural language description and interpretation are expected" (Bresler and Stake 1991, p.6). Cohen, Manion and Morrison agree that research becomes both qualitative and quantitative when it expresses personal interpretations of individuals in the process of defining themselves within their cosmos (2007, p.8). The object of the present research demands both an overview of philosophies devised by individuals in the process of self-definition (e.g. F.M. Alexander, B.K.S. Iyengar, Joseph Pilates) as well as a verification of somatic (i.e. first-person perspective) experiences of the researcher, the workshop participants and the interviewees.

4.1.4 Qualitative research, phenomenology, Hanna and Couperin

In analysing qualitative approaches Cohen, Manion and Morrison (2007, p.22) consider the definition of phenomenology by English and English (1958) quoted as "a theoretical point of view that advocates the study of direct experience taken at face value; and one which sees behaviour as determined by the phenomena of experience rather than by external, objective and physically described reality". Bresler and Stake (1991, p.4) consider qualitative researchers to be phenomenological in their orientation. "Most maintain that knowledge is a human construction. They reason as follows: Although knowledge starts with sensory experience of external stimuli, these sensations are immediately given meaning by the recipient. Though meaning originates in outside action, only the inside interpretation is known". This view agrees with Hanna's first-person perspective which is the premise to somatic

considerations (see Chapter 2.1). The unsuitability of quantitative methods for somatic research has been supported by Hanna (1988), Gomez (1988), Green (1993) and De Negri (as cited in De Negri, 1996, p.54).

François Couperin's unusually holistic instructions, which were viewed through a somatic lens in Chapter 3, are considered by Bresler and Stake (1991, pp.8, 80) as instructions appearing in the first music pedagogy book and as a valid example of qualitative observations due to their student-centred perspective, although with a reservation as to whether the author could be considered a researcher. Recording experiences forms a central tool in the present research. My personal experience was a starting point that generated this research project; this was followed by the investigation of personal experiences of somatic pioneers all of whom sought solutions to their somatic problems; the research project culminated with the analysis of individual experiences of pianists exposed to somatic principles in a workshop setup as well as analysis of the views of somatic instructors who are also pianists and piano teachers.

Observing and examining everyday experiences is a common denominator in phenomenology and ethnomethodology (Cohen, Manion and Morrison, 2007, p.23). The first-person perspective is also embraced by ethnomethodology as it aims at "understanding social accomplishments…[ ]…from within" (Burrel and Morgan, 1979 as cited in Cohen, Manion and Morrison, 2007, p.23).

4.1.5 Aim and suitability of qualitative research for the present study

As stated before, this research project sets out to investigate the possible impact of somatic education on piano performance through a review of experiential knowledge as recorded (i) by myself in the form of a chronological journey of my investigations, (ii) by somatic pioneers, (iii) by pianists through their exposure to principles of somatic methods and, finally, (iv) as recorded by teachers of piano who are also qualified experts in somatic education. The higher aim is to shed light in this grey area and allow people concerned to view piano performance from a multiple somatic perspective. This research stance is expressed through the definition of Bresler and Stake of the aim of qualitative research: "The aim of qualitative research is to

construct a clearer experiential memory and to help people obtain a more sophisticated account of things" (Bresler and Stake, 1991, p.4).

The holistic approach required to investigate the impact of the wider area of somatic education to the highly specialised and specific area of piano performance is justified by the following view by Bresler and Stake: "Researchers interested in the uniqueness of particular teaching or learning find value in qualitative studies because the design allows or demands extra attention to physical, temporal, historical, social, political, economic, and aesthetic contexts" (Bresler and Stake, 1991, p.5).

4.1.6 Forms of research not suitable for the present project

In the process of choosing the most suitable methodological theory I considered forms of educational research which did not prove suitable for this project.

Experimental research was unsuitable for the present research due to its nature of validity. Experimental investigators need to create controlled environments in which they operate by exposing their subjects in controlled circumstances in order to produce viable and countable values (Cohen, Manion and Mrorison 2007, pp.272-296). The nature of research in somatic education as applied to piano performance demanded a less restricted, non-experimental approach which takes into primary consideration the personal feedback of the subjects as a reaction to the object of the research.

Case study, internet-based, computer usage, and historical research were not adopted as isolated research approaches. However, elements of these research styles were utilised in the process of the present research in order to cultivate a more comprehensive and versatile approach. These elements include:

- Internet-based interviews
- Follow through of individual cases as recorded by somatic teachers
- Shedding light on past facts in order to inform present situations
- Use of biographical notes of somatic pioneers

4.1.7 Combining qualitative with ethnographic, naturalistic and action research

According to Bresler and Stake (1991, p.5), the origins of qualitative research methods are detected in ethnographic fieldwork among others. Cohen, Manion and Morrison (2007, p.167-190) also acknowledge the foundational correlations between qualitative, naturalistic and ethnographic research. Out of the many characteristics of the qualitative, naturalistic and ethnographic paradigm the premises of the present research are based on the following characteristics (Boas 1943; Blumer 1969; Lincoln and Guba 1985; Woods 1992; LeCompte and Preissle 1993 as cited in Cohen, Manion and Morrison, 2007, pp.167, 168):

- Humans actively construct their own meanings of situations.
- Realities are multiple, constructed and holistic.
- Inquiries are influenced by inquirer values as expressed in the choice of a problem, evaluand or policy option, and in the framing, bounding and focusing of that problem, evaluand or policy option.
- Inquiry is influenced by the choice of the paradigm that guides the investigation into the problem.
- Inquiry is influenced by the choice of the substantive theory utilised to guide the collection and analysis of data and in the interpretation of findings.
- Social research needs to examine situations through the eyes of the participants.
- Social reality, experiences and social phenomena are capable of multiple, sometimes contradictory interpretations and are available to us through social interaction.
- Theory generation is derivative – grounded (Glaser and Strauss 1967, as cited in Cohen, Manion and Morrison, 2007) – the data suggest the theory rather than vice versa.

Following the evaluation of various methods of research I added action research methodology in order to record experience, reflective action and reflection. According to McNiff and Elliott (as cited in Cohen, Manion and Morrison, 2007,

p.298), "action research combines diagnosis, action and reflection, focusing on practical issues that have been identified by participants and which are somehow both problematic yet capable of being changed". Action research also includes evaluation and is methodologically eclectic (Hult, Lennung & McKennan, as cited in Cohen, Manion and Morrison, 2007, p.299), a prerequisite that was taken into consideration from the beginning of this study. Action research offers fertile ground for the development of new educational structures for groups of learners and considers both researchers and participants as learners who reflect and evaluate their progress through the experimentation of new and ground breaking pedagogical values (Cohen, Manion and Morrison, 2007, pp.297-313). Although action research is more advantageous and effective when carried out at a local level, which was limiting in the present study of global repercussions, the retrospective character of my research journey as well as the long standing validation processes and post-action trials were suitable in the circumstances of somatic applications in piano performance.

4.2 Population

The process of somatic education requires a first-person perspective both in the student and the educator. I, thus, defined as potential population two categories of piano performers:

1. Pianists interested in learning the principles and processes of somatic education in relation to piano performance
2. Pianists/teachers of piano who are simultaneously teachers of a somatic method.

The first category regards a population that can be exposed to principles and processes of somatic education in relation to piano performance through theoretical and experiential day workshops. Pianists of all pianistic levels, aged fifteen and above were invited to attend the workshops. These participants were then invited to answer a questionnaire on the issues pertaining to the present research.

The second category regards pianists who have gained expertise in piano pedagogy through their experience of teaching a somatic method. Interviews of people in this category shed light to the research questions from the perspective of the educator and

their understanding of the impact of their respective somatic method on themselves as pianists and piano teachers as well as on their piano students.

4.3 Sample

4.3.1 Workshop participants

Workshops in Somatics for Pianists© were conducted in twenty-six Greek music conservatoires and were advertised to pianists of all pianistic levels aged from fifteen and above (772 private music schools and music conservatoires in Greece, ~32,500 matriculated students). The sample was taken from ten of these workshops in Somatics for Pianists© which were organised in ten music conservatoires advertised to all interested pianists of ages fifteen and above residing in Northern Greece. The geographical restriction was determined due to financial and time limitations as I reside in Northern Greece and was the only lecturer/workshop presenter. Participants identified themselves as engaged in piano performance in one of the following capacities:

- piano student
- professional pianist
- amateur pianist
- piano teacher
- piano accompanist
- piano soloist

The use of concepts and theories developed in the area of adult education is consulted here according to Rogers' wider concept of the term "adult", which refers to a personal and social state rather than an age range. The recognition of a person as adult is a self-recognition as well as acknowledgement of their social environment (Rogers, 1998, p.61). Although independence, voting, legal and driving rights are given at the age of eighteen in Greece, the age of fifteen years old is crucial as it marks the end of mandatory education (primary and lower-division secondary) and the beginning of post-mandatory higher-division secondary education. As a result, Greek students aged fifteen to eighteen years old attending music conservatoires in parallel with higher-division secondary education will have to be able to incorporate a

busy conservatoire curriculum into a demanding higher-division secondary school curriculum, a factor that contributes to the awakening of conscious choice of continuation of musical studies, which demands a sense of perspective, autonomy and development in the young students.

The participants were pianists who are in a constant developmental process, they possess intermediate or advanced pianistic skills, they have expectations as to the particular learning tool that is provided in the workshops, they possess conflicting aspirations and have usually formed and adopted their chosen piano schooling. These characteristics render them participants in a process of adult education (Rogers, 1998, p.92).

4.3.2 Interviewees

Six pianists were interviewed following an internet Google search on pianists who are also somatic educators. The keywords were:

- Pilates and piano
- Pilates for pianists
- Pilates piano lessons
- Yoga and piano
- Yoga for pianists
- Yoga piano lessons
- Alexander Technique and piano
- Alexander Technique for pianists
- Alexander Technique piano lessons

The criteria of choice were:

- Availability of the pianist and response to initial contact
- Consent of the pianist to be interviewed
- Dual capacity of piano teacher and somatic educator
- Finding at least two representative educators from each somatic method examined in the present thesis (Yoga, the Pilates Method, the Alexander Technique) in order to form two opposing or congruent views

4.4 Research tools: Questionnaires and Interviews

The two research tools used to collect information on the impact of somatic education on piano performance were questionnaires provided to participants of ten workshops on Somatics for Pianists© and e-mail interviews to pianists/piano teachers who are also teachers of a somatic method. The questionnaire was tested in a pilot workshop which took place before the ten recorded workshops. The limitations that occurred helped to form the final questionnaire of twenty-three main questions with sub-questions. Following the collection of questionnaires, six interviews were conducted to reinforce and clarify points raised in the questionnaires that are directly linked with the research questions. The interview process and questions were tested in two pilot interviews, one telephone and one email interview, in which the limitations were detected and helped to form the final version of the interview questions. The data that stemmed from 385 valid questionnaires and six interviews was presented and analysed around the main research questions. Additional information which is relevant to somatic education and piano performance but not pertinent to the main research questions occurred as a by-product of the data analysis.

4.4.1 Workshops in Somatics for Pianists©

In order to devise an effective, well structured and comprehensive workshop on somatic education for pianists I turned to the theoretical and practical foundations of adult education and in particular the work of Rogers (1998), Mezirow (2007) and Courau (2000). I complemented this with pedagogical premises of the Interactive Teaching Method (ITM) as designed by Dr. Weed through his own written material (2003) and the work of Covey (2004), Chopra (1996), Carnegie (2006), Jeffers (1991) and, most significantly, Kiyosaki (1993).

4.4.1.1 Theoretical Foundations of the workshops in Somatics for Pianists©

In the context of these workshops, education is structured and organised, thus becoming a prosperous field for learning (Rogers, 1998, p.67). Learning is viewed as the participants' acceptance of changing at a physical, intellectual and emotional level (Rogers, 1998, p.113).

The essential elements of an educational process are: the educational body, the learner, the aims and objectives and the events that will help bring about the aims and objectives of the process (Rogers 1998, p.69). This workshop is a non-typical education sector as it is organised by private and municipal music conservatoires which are independent non-profit organisations (Rogers, 1998, p.21). I collaborated with each respective conservatoire to attract participants to the workshops and, by participating, students became part of a contract between themselves, the conservatoire where the workshop took place and myself as the educator (Rogers, 1998, p.25).

The educational model used follows Rogers' contemporary model which is characterised by:

- Dynamic learning
- Inquisition
- Seeking satisfaction
- Impulse as source
- Key words: "discover, create"
- Problem solving
- Self education (Rogers, 1998, p.114)

As part of the process of "learning contract" my ultimate aim was to organise the most constructive educational circumstances and the acceptance of learners to participate fulfils the contract. I started on the premise that neither I as educator/instructor nor the participants as learners of new ideas become part of this educational process without any prior experience or knowledge. On the contrary, I have a plan of material I wish to expose students to and participants arrive with preconceived ideas in mind of what they will learn. These preconceived ideas are usually formed through the way the workshop is advertised in terms of semiology and recognisable concepts (Rogers, 1998, pp.26, 27).

The workshop aims at presentation of information that will stimulate thinking and movement both on an intellectual and experiential level. The spiral of learning as

seen by Rogers (1998, pp. 151-155) which suits the educational process of Somatics for Pianists© is shown in Figure 4.2.

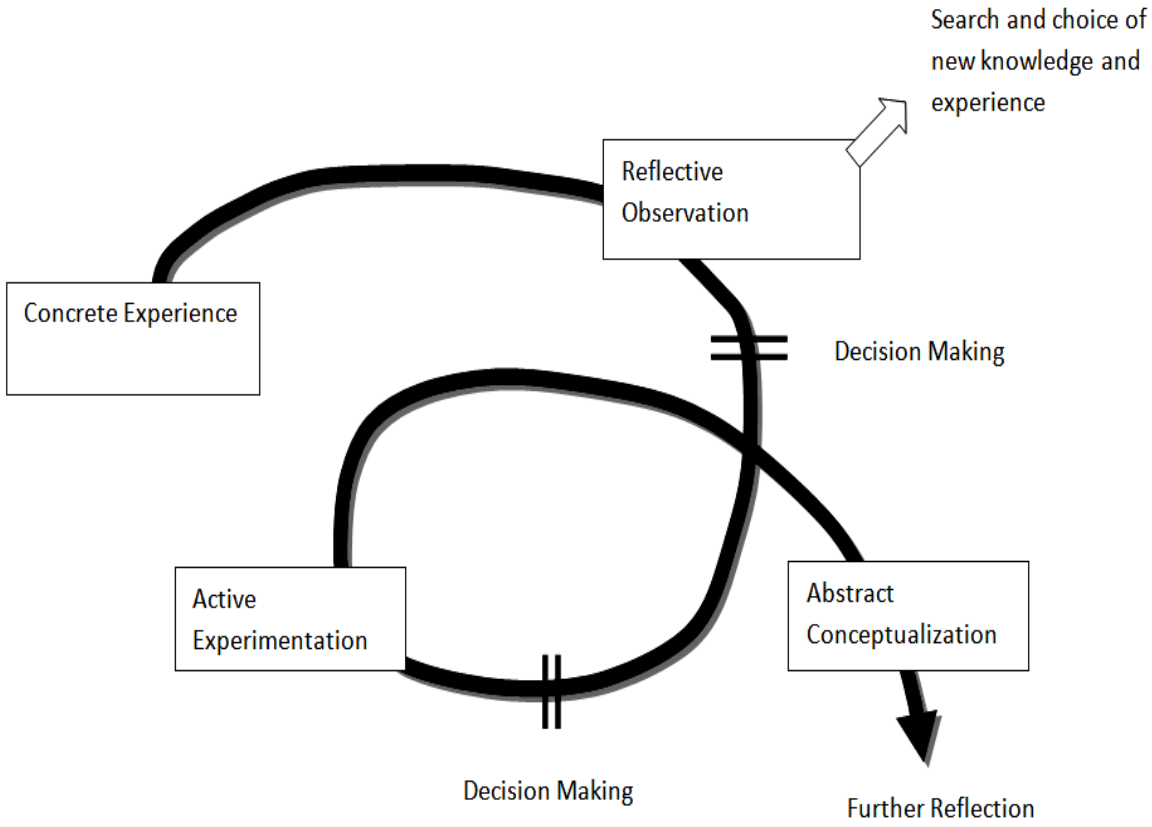

Figure 4.2 The spiral of learning

The workshop has both short term and long term aims. It follows the steps of transformational learning as set out by Mezirow (2007, pp.58-63). Through exposure to new knowledge it aims at transforming participants by:

- giving them a disorientating dilemma in choosing to come out of their intellectual and physical comfort zone
- challenging them to a self-evaluation of artistic and performing fears and inhibitions
- helping them discover the source of piano related discomfort or injury or limitation
- presenting an array of physical and intellectual choices and their repercussions on their piano performance

- offering them a well-designed plan of action both during the workshop and thereafter
- equipping them with sufficient basic knowledge and experience to allow them to continue in the right direction if they so wish
- challenging them to try out new physical and artistic identities

In designing and organising the content of the workshops on Somatics for Pianists©, the pace of presentation, the set-up and spatial circumstances and the techniques used, I followed the educational prototypes of Courau and Weed. According to Courau (2000, pp.26-30) there are seven main prerequisite circumstances for adults to learn:

1. adults learn when they understand
2. adults learn when education relates directly to their reality
3. adults learn when they perceive, comprehend and accept the objectives of the educational programme
4. adults learn when they interact actively
5. adults learn when the educator can evaluate the outcomes of success and failure
6. adults learn when they feel part of a group
7. adults learn in an atmosphere that encourages participation

Brainstorming allows all participants to express their views and ideas without the fear of being criticised. This process produces a plethora of new information which has appeared by the group for the group (Courau, 2000, p.61). Group discussion allows intervention of every participant within the conceptual frame set by the educator (Courau, 2000, p.68). Wherever the space allowed for it, I preferred and encouraged an amphitheatrical U or V setting. In addition to being a pleasant and constructive setting it allows participants to observe each other and allows me as the educator to be in an equally close proximity to all participants (Courau, 2000, p.78).

In analysing the fundamental ideology behind the Interactive Teaching Method (ITM), Weed distinguishes between conceptual, pedagogical and procedural factors. The ITM factors that I have used in the process of the workshops are the following:
Conceptual factors:

- students will respond accurately and powerfully to the assumptions held by a teacher while teaching (Weed, 2003, VII.D)
- principles that work on one level largely work on other levels as well (Weed, 2003, VIII. B)

Pedagogical factors:

- We should not overlay erroneous preconceived ideas but eradicate them as far as possible before teaching or submitting the new and correct ideas (Alexander, 1997, as cited in Weed, I.A.3, 2003)
- The student should be allowed to think for him/herself (ibid, I.A.4a)
- By recruiting the student's powers of intelligence to solve all of the problems involved at all times, the rate of learning is greatly enhanced (ibid, I.A.5)
- Teaching is a progression of invitations for the student to explore rather than a set of instructions for the student to learn (Weed, 2003, I.C.1)
- It is a far better goal as educators to prepare our students for and encourage our students in directed, strategic self-study from the beginning rather than to carry out micro-management of their appearance or performance of set procedures (Weed, 2003, II)
- Discussion and confrontation gives students the opportunity to re-think their thoughts and sift their arguments (Weed, 2003, II.D.2)
- Discussion and confrontation gives students the tools with which to experience the power of paradigm shifts (Weed, 2003, II.D.3)
- Students will always make mistakes and take wrong pathways as part of the learning process. All mistakes and wrong pathways will eventually reveal themselves to the student (Weed, 2003, IV.A.2, IV.A.4)
- The art of making mistakes and learning from them is an extremely important part of education (Kiyosaki, 1993 as cited in Weed, 2003, IV.A.5)

Procedural factors:

- Group dynamics procedures increase the number of resources available to each student (Weed, 2003, II.C)
- Application of group dynamics procedures not only gives students the opportunity to increase their listening and watching skills but gives them a sound reason for doing so (Weed, 2003, II.D)

- Application of group dynamics procedures gives students the ability to watch and participate in the same or similar lessons being given to other students (Weed, 2003, II.E)
- Application of group dynamics procedures gives students the ability to work on and develop their focus of attention at their own pace (Weed, 2003, II.F)
- Application of group dynamics procedures means an increase in efficiency in delivery of information and in the processing of that information by the students (Weed, 2003, II.G)
- Student driven lessons: it is the teacher and not the student who is in the better position to be flexible with regard to sequence and timing of instruction and with respect to the introduction of material and the way in which the lesson design itself should proceed (Weed, 2003, II.H.1)
- Students will most easily learn those things in which they are most interested (Weed, 2003, II.H.1.a)
- Visual learning is an extremely useful tool when used in group dynamics procedures and especially when coupled with the process of articulation skill building, this can be an incredibly powerful tool for the increase of understanding and command of material and thereby lead to a decrease in the time required for learning (Weed, 2003, II.I.1)
- The power of laughter in learning (Weed, 2003, II.J)

These factors mentioned above allowed the simultaneous inclusion of theoretical and practical knowledge within the span of a day, a feat that can be challenging due to the dense and complex material involved. The morning sessions thus included very broad and variable cognitive material through which participants were exposed to the primary concepts of three somatic methods (see Section 4.4.1.3). The afternoon sessions included the process of experimentation and practical application of the learned concepts (see Section 4.4.1.3), which, owing to the delivery techniques proposed by the ITM, demonstrated a high degree of constructive participation and unproblematic progress.

4.4.1.2 Contracts and Educational Tools

The process of organising the workshops in ten Greek music conservatoires started with a proposal to each respective artistic and administrative director (in some cases one person held both posts). Upon acceptance of the proposal, the conservatoire administrations proceeded to advertise the workshop in the form of email, flyers, posters and verbal invitation. Participation in each of the workshops was not restricted to students of the conservatoire where the workshop was held but was also opened to external participants. The total number of participants per conservatoire did not exceed seventy (n = 70 restriction according to parameters mentioned in the educational theories analysed) or was limited to less than seventy according to the space capacity of the conservatoire rooms available (conservatoire capacities regulation, online).

In all of the conservatoires where I delivered the workshops on Somatics for Pianists© I was given an external collaborator payment contract and was not involved with the participants in any other capacity previously. Therefore, the risk of the possibility of participants desiring to 'please the researcher' was eliminated as far as this was possible and within my sphere of influence. The workshops were designed as a non-typical form of educational tool and were thus not offered as part of the students' conservatoire curriculum, rather as an event which took place on the premises of the conservatoire and was of interest to musicians in general and pianists in particular. As such, attendance or absence did not affect the students' grades in any way; their participation was utterly dependent upon their personal interest in the material taught.

As regards the pianistic level of participants, there was no restriction of selection as can be seen from the above list of various pianistic capacities of the participants. This is due to the fact that somatic education was also examined as to its availability, accessibility and information absorption levels from a third-person as well as a first-person perspective. Therefore, questions regarding the suitability of somatic education to various levels of piano performance were answered by participants of all pianistic levels, all pianistic capacities, all ages from fifteen and above and of many varying levels of somatic knowledge. The research and educational objectives of this

project focused on the impact of somatic education on piano performance. Consequently, the different levels of performance of the participants were not identified as they were not related to the variables examined. The various problems stemming from the absence of a somatically informed pianistic culture can present themselves at any stage of a pianist's progress regardless of their performance level. Equally, from my personal experience (and also as is confirmed in the answer to Question 22, § 5.1.6), somatic education can have an impact on a pianist's progress regardless of their level, age or capacity (soloist, accompanist, teacher, student etc).

The workshops were advertised by each conservatoire with their respective tariffs for participation which ranged from 20 to 40 Euros for a nine-hour workshop which was conducted in one day. These workshops formed part of a wider series of workshops aimed at musicians of all instruments and voice that began in 2005. The workshops aimed at pianists in particular began in 2008. Testing of the questionnaires occurred in "workshop 0" in December 2008 which was considered as a pilot workshop.

The tools used in the Somatics for Pianists© workshops are:

- Power Point Projection (on wall or chart)
- A piano with adjustable piano stool and support for the feet
- Laminated photographs of projections for individual perusal
- A yoga mat
- Seats for students
- Seat for educator

4.4.1.3 Thematic Units covered in Somatics for Pianists© workshops

The thematic material of the Somatics for Pianists© workshops is drawn from the literature reviewed in PART I as well as teacher training material that I have collected through the attendance of three teacher training programmes in methods of somatic education (as analysed in Chapter 1).

Morning session

- Introduction to Somatics for Pianists©
- Distinguishing effortless play from effortful play in famous pianists through photographs and muted video recordings
- Structure of the workshop exposed
- The importance of exploring movement through somatic methods and the difference of somatic methods from other movement activities such as sports and dancing
- Definition and basic principles of the Pilates Method with some group applications
- Definition and basic principles of Yoga with some group applications
- Definition and basic principles of the Alexander Technique with some group applications
- Anatomical misunderstandings: function and structure of fingers, hands, arms, shoulders, head, torso and legs. Use of anatomical drawings, photos, x-rays
- Exploration of the sitting stance through the principles of the Pilates Method, Yoga and the Alexander Technique

Afternoon session

- Masterclass format: applications of material from morning session to individual piano lessons with active group participation and discussion:
    - Mechanics of the piano
    - Ergonomic considerations
    - Tension and freedom in practice and performance
    - Interpretation, emotion and tension
    - Piano technique and general body movement
    - Technical schools versus healthy piano performance
    - Issues arising from students' queries
    - Practising habits
- Clarification of diagnosis and treatment specialities:
    - Traditional medicine
    - Alternative medicine
    - Therapies and treatments available

- Recommendation of local opportunities for lessons in somatic education
- Recommendation of relevant bibliography and internet links for self study
- Questionnaires available to be completed in class or in private.

4.4.1.4 Workshops as conducted by chronological order

MONTH/YEAR	PARTICIPANTS	VALID QUESTIONNAIRES
0. (December 2008	35 participants	29 valid questionnaires)
1. February 2009	57 participants	28 valid questionnaires
2. November 2009	23 participants	23 valid questionnaires
3. October 2010	41 participants	34 valid questionnaires
4. December 2010	63 participants	61 valid questionnaires
5. February 2011	62 participants	62 valid questionnaires
6. March 2011	47 participants	45 valid questionnaires
7. April 2011	38 participants	22 valid questionnaires
8. April 2011	64 participants	62 valid questionnaires
9. October 2011	36 participants	33 valid questionnaires
10. May 2012	26 participants	15 valid questionnaires

A total of 385 valid questionnaires (workshop 0 represents the pilot study) were produced as a result of ten workshops between 2009 and 2012. The questionnaires were sent in advance to each conservatoire in order to be reviewed by the respective executive and artistic directors and approved on a basis of my pedagogical and research motivations. Upon completion of the afternoon session, participants were informed about the questionnaires and the strategy of exposure to the questionnaires followed the prototype set by Cohen, Manion and Morrison (2007, pp.317-348). Therefore, participants were informed that:

- Completing the questionnaires was entirely voluntary and did not form part of the educational process of attending the workshop
- The purpose of the questionnaires was to shed light on the area of somatic education as related to piano performance

- The questionnaire could be completed at any time (not necessarily within the premises of the conservatoire) and as fully or as sporadically as the participants wished
- If returned, these questionnaires should be anonymous and are guaranteed to be untraceable
- Participants may, if they wish, receive a copy of the final statistical results of the sum of questionnaires as well as a copy of the present thesis

The questionnaire as indicated by Cohen, Manion and Morrison (2007, pp.321-332) included dichotomous questions (questions whose answers options were "yes" or "no"), multiple choice questions (where the choice of selected answers could be more than one) and rating scales. The questions were planned around the following axes:

- 2 general questions including demographics
- 5 questions on piano playing which categorised the participants according to their capacities as piano players and possible pianistic issues or injury background,
- 4 questions on somatic education which categorised participants according to their relation to somatic education,
- 3 questions on somatic education aimed only at participants already pursuing a somatic method and
- 13 questions on the thematic material taught during the workshop, where participants were invited to evaluate somatic education in relation to piano performance.

4.4.1.5 Limitations in the delivery of workshops of Somatics for Pianists© and the collection of questionnaires

One of the limitations already mentioned was the financial limitation which narrowed my geographical area of action to Northern Greek conservatoires. Another limitation was the varying participation fees, which may have played a role in the predisposition of the participants and their attitudes towards the workshop. Due to the geographical limitation, there has emerged another possible limitation; pianists who attend conservatoires in this geographical region either as accompanists, amateurs, teachers

or students are likely and free to attend workshops occurring in both their own conservatoire and other conservatoires. Sample repeating is not desired in this particular research format, however, there is the possibility of sample repeating, which cannot be excluded due to professional and educational ethics between conservatoire students and teachers. In order to avoid questionnaires being handed in more than once by the same participant, in the beginning of every workshop, together with the confirmation of anonymity, I advised returning participants not to fill in the questionnaires unless they hadn't done so at their previous attendance as this would distort the effort of this project to provide accurate feedback from a sample of participants that have been through the same experiences. I also advised participants that had already attended a previous workshop that they would possibly observe information and practical applications at a more advanced level and that their interactions would be equally constructive to them and the new participants. This allowed me to eliminate as far as was possible the possibility of providing returning participants with questionnaires as I could detect their advanced knowledge of the material taught.

The demographic questions did not include gender specification due to the fact that as the attendance was at times substantially female oriented with one male participant this would jeopardise anonymity. Although not pertinent to this research this information could have served as a cross reference to previous research into the susceptibility of females to piano-related musculoskeletal disorders.

Pianistic issues and advice had to be filtered through a distinctly somatic lens in order to avoid conflict between piano teachers and their students that may have attended the workshops together. This was a delicate issue that I had come across in the years prior to the commencement of my research and I was therefore reluctant to use pianistic vocabulary when describing technical issues. On the one hand, this fact acted as a limitation as to the analysis of piano technique in somatic terms. On the other hand, it allowed participants to view their problems on a somatic level from the very beginning of exposure to new information, thus eliminating most possibilities for micro-management of pianistic issues which were conceptually set apart from the main didactic purpose of the workshops.

In questions which evaluated the workshops and revolved around the main research question (can somatic education have a positive impact in piano performance) the extreme percentages in positive evaluation harbour the limitation stemming from the desire of the participants to please the teacher/lecturer. This has been taken into consideration and recurring questions of a similar content have been designed and repeated intentionally in order to increase the possibility of expression of the participants' original beliefs and to encourage the expression of participants' sincere opinions in order to assure as prejudice-free a result as is possible.

4.4.2 Interviews

The interviews were used as a supplementary tool in order to triangulate issues raised in the questionnaires from the perspective of teachers of somatic methods who are also piano teachers and performers. As such, they were designed and conducted after the collection of questionnaires from the workshops.

4.4.2.1 Bias and contracts

The initial contact was made through an introductory email in which the general field of the thesis was set (see Appendix F). Care was taken in order to avoid bias regarding the impact of somatic education on piano performance. The possible interview options proposed were Skype, telephone or email interview. All six of the interviewees chose to answer by email.

The interviews were conducted between April and October 2013. The contract agreement covered assurance of anonymity, publication of the final project and its availability to the interviewees. Description of the current research project was followed by an explanation of the structure and content of the interview questions encouraging the interviewees to take as many liberties as they found suitable in answering the questions.

4.4.2.2 Thematic material covered in the interview questions

There are two thematic axes of questions in the interviews: Questions of a personal nature, which set the educational and experiential background of each teacher, and questions of a somatic nature in which each teacher was invited to evaluate the impact of their adopted somatic method on piano performance, teaching and practice. More specifically, the seven questions of a personal nature covered the age group, musical capacity (teacher, soloist, chamber musician etc.), somatic capacity (trainee, trainer, practitioner etc.), music qualifications and experience, the setting in which each interviewee teaches the piano, general somatic experience (whether in the area of expertise or other somatic areas). Thirteen questions of a somatic nature examined the reasons why each interviewee chose a specific somatic method, the impact of their chosen method on their general well-being, piano playing and teaching and the possible impact that their chosen somatic method may have on their piano students, concluding with the interviewees' ideal somatic educational setting for piano students and the stage of learning at which pianists should be exposed to somatic principles.

Summary

In this chapter I elaborated on the methodological theories which were the foundation for my research and observed that this study benefits from a combination of ethnographic, naturalistic and action research theories and focuses on qualitative analyses with a combination of quantitative elements where applicable. I presented the motives behind the choice of population and sample suited for this research, the research tools used (workshops, questionnaires, interviews) as well as the pedagogical theories that formed the bases for the creation of the workshops in Somatics for Pianists©. I also gave a brief account of the limitations that presented themselves during the process of planning the workshops.

In the next chapter I will provide a detailed description of the data that resulted from the collected questionnaires and interviews. At the same time I will analyse the results in order to answer the main research questions of this research project.

Chapter 5

Data description, analysis and interpretation

5.1 Description, analysis and interpretation of questionnaire results

This section juxtaposes the twenty three questions and their sub-questions included in the questionnaires which were given to participants at the end of each workshop in Somatics for Pianists©. The formulation of each question and the data that was produced as a result of a statistical analysis are followed by an interpretation of the implications of each answer for the present thesis.

The questionnaires were designed to shed light on the contribution of somatic education to piano performance both as learned and perceived during the workshops and as experienced by pianists who are already pursuing a somatic method. More specifically, five questions (Questions 3 to 7) were designed as indicators of the relation of the participants to sensitive somatic issues stemming from their capacities as pianists; four questions (Questions 8 to 10) categorised participants according to their understanding, appreciation and experience in somatic education and evaluated their existing and potential involvement with somatic education; three questions (Questions 10.1, 10.2 and 10.3 including ten sub-questions) were aimed at those participants who already pursue a somatic method and have shed light on the impact of somatic education on specific pianistic issues and were directly related to the research questions; thirteen questions (Questions 11 to 23) on the thematic material taught during the workshop evaluated pianists' understanding of the principles taught, invited pianists to evaluate the educational delivery of information as well as the impact of somatic education in relation to piano performance and also invited them to indicate the stage of piano education at which somatic education should be included.

Ten workshops in Somatics for Pianists© conducted from February 2009 to May 2012 (see Appendix C) produced 385 valid questionnaires out of 457 participants. The 72 remaining questionnaires were invalid due to missing pages, having fewer than ten answered questions or not being handed in.

The 385 participants attended the workshop 1 to 4 times. Workshop attendance can be seen in Table 5.1.1 (also in Figure 5.1.2, Appendix C).

Workshop attendance	Count
1 workshop	135
2 workshops	110
3 workshops	110
4 workshops	30
Total	385

Table 5.1.1 Workshop attendance

During the recording of data entry logical and obvious mistakes were corrected. The insertion of data (codified answers) was done in an Excel document while the analysis that followed was performed on IBM SPSS software for statistical analysis.
The accepted level of significance is 0.05.

5.1.1 Statistical tests used:

Pearson chi-square test was applied to test if there was a relationship between two categorical variables. Post-hoc comparisons were performed using z-tests, when the chi-square test was significant and (at least) one of the categorical variables had more than two categories. Whenever post-hoc pair-wise comparisons were performed, the accepted significance level was corrected using Bonferroni correction.

In multiple choice questions participants were asked to circle as many or as few options as they felt appropriate**.**

5.1.2 General questions

Question 1

- Age group

The majority of participants (39%) were between the ages of 19 and 23. The smallest group (7%) was people aged between 27 and 30 years old (Appendix C, Figure 5.1.1). This research did not lay emphasis on the age of participants.

Question 2

- How many Somatics for Pianists© workshops have you attended?

One of the limitations in interpreting the 385 questionnaires was that, due to the geographical restrictions that applied, many participants attended the workshop more than once. In particular, as shown in Figure 5.1.2, 35% of the participants attended the workshop only once and they form the major group of attendees, while 29% of the participants attended the workshop twice, 29% of the participants attended the workshop three times. Only 8% attended the workshop four times. As mentioned already in Chapter 4, returning participants were asked not to fill in questionnaires if they had already done so previously. However, due to the fact that it is impossible to guarantee total response to this request and given the fact that the context of the workshops, the delivery techniques and the contracts were the same in all 10 workshops, I am making the hypothesis that the views and opinions of participants were the same, regardless of the number of times they attended the workshop.

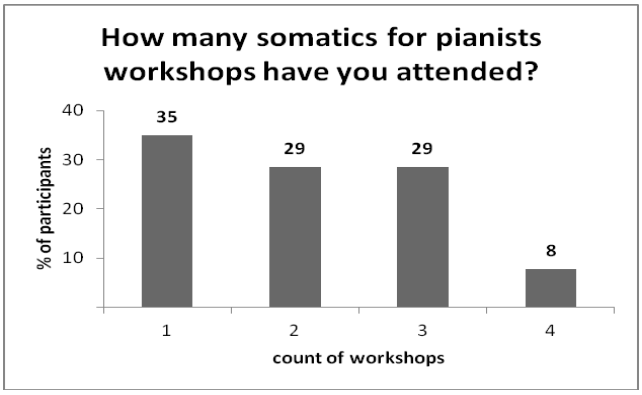

Figure 5.1.2 Workshop attendance

5.1.3 Questions on piano playing

This group of questions 3 to 7 was aimed at categorising the sample in terms of their background and experience as pianists. The purpose was to identify the issues that may preoccupy pianists who are interested in attending a workshop on somatics as well as to identify the steps that these pianists have taken to resolve these issues.

Question 3

- Nature of piano playing

This was a multiple choice question where participants could choose as many answers as they found appropriate in order to specify the particular capacity within which pianists who participated in the workshop act (Figure 5.1.3). Of the 385 participants who completed the questionnaire, the majority (85%) were students, 69% described themselves as accompanists, 32% were teachers, 18% were amateurs, 16% were professional musicians and 8% were soloists.

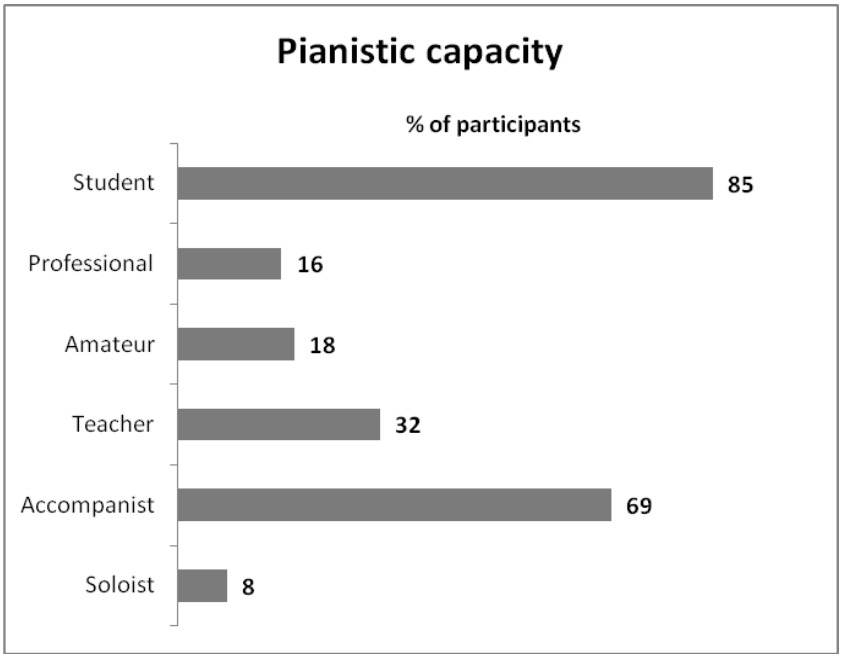

Figure 5.1.3 Pianistic capacity of participants

In summing up the first three questions, the majority of the participants were students aged 15-23 acting, amongst other pianistic capacities, as accompanists.

Question 4

- Do you have any physical problems arising from piano practice/performance?

As seen in Figure 5.1.4, a great percentage of pianists reported that they experience technical problems and fatigue (88%), more than half (64%) feel discomfort, approximately half (48%) feel pain, while a smaller percentage have experienced injury (less than 8%). This indicates that the majority of the participants have experienced difficulties of some kind through their piano playing. This fact may be interpreted as reflecting a wider distribution of problems arising from piano performance in the population of pianists. This statistic confirms the ongoing necessity for research into the implementation of different and revised pedagogical piano curricula which will assure prevention of the reported issues. The concern of the majority of pianists with technical problems, fatigue, discomfort and pain renders them ideal participants in the workshop and respondents to the questionnaire as they are more likely to have thought critically about their piano-related problems.

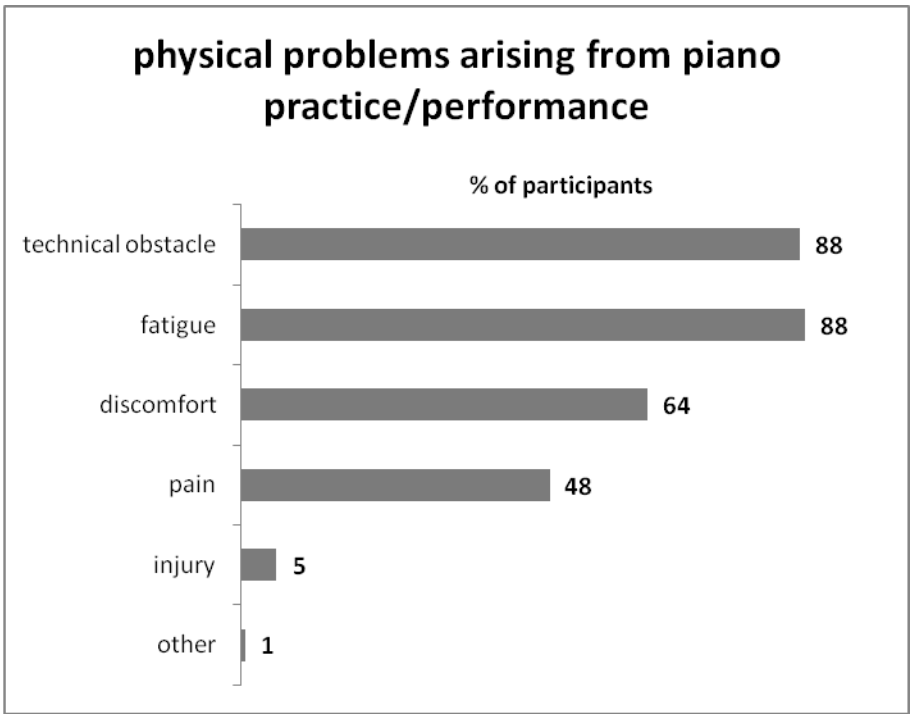

Figure 5.1.4 Physical problems arising from piano practice and/or performance

Question 5

- As a result of your piano-related physical problem did you seek for:
    - A new teacher
    - A medical doctor
    - An alternative doctor
    - An alternative practitioner
    - A somatic educator
    - Other

In treating piano-related physical problems most participants either consulted a medical doctor (42%) or a different teacher (42%). Very few sought out alternative doctors, alternative practitioners or somatic educators. Somatic educators are the least popular option (8%) (Appendix C, Figure 5.1.5). The first port of call (medical doctor and different piano teacher) following a piano-related problem may be an indicator of the ongoing dualistic consideration of pianists, that is, the preference of pianists to deal with problems in a direct way that is linked with the specific symptoms rather than wondering about the more general and profound possible causes for their piano-related problems such as psychological, environmental or somatic circumstances. It is interesting to observe that even in the internet era, where information about piano-related problems and their possible sources is abundant, the first port of call will be the teacher (i.e. the person most closely related to the problem through a specific pianistic perspective and not a wider somatic perspective) or the medical doctor (i.e. the person who will deal with the symptom and not necessarily with the cause). In the circumstances in which these workshops were conducted this suggests that somatic education is still not part of a pianist's culture and is not closely linked to piano performance as a tool for prevention, education and rehabilitation.

It is constructive to examine whether the number of participants who sought advice from a medical doctor (42%) also sought advice from other experts, in order to understand how pianists evaluate and prioritise somatic education in relation to medicine.

		Seek for a medical doctor	
		No	Yes
		Column N %	Column N %
Seek for a new teacher	No	38.1	86.4
	Yes	**61.9**	**13.6**
Seek for an alternative doctor	No	81.2	92.6
	Yes	**18.8**	**7.4**
Seek for an alternative practitioner	No	74.0	86.4
	Yes	**26.0**	**13.6**
Seek for somatic educator	No	88.3	97.5
	Yes	**11.7**	**2.5**
Seek for - other	No	80.7	92.0
	Yes	**19.3**	**8.0**

Table 5.1.2 Combinational table showing participants' first and second port of call

Table 5.1.2 shows that there is a relationship between the choice of participants to seek advice from a medical doctor or not and the other options (the differences are statistically significant). Of the participants who sought advice from a medical doctor only 2.5% sought advice from a somatic educator as well, while their most popular parallel port of call was a new teacher (14%) or an alternative practitioner (14%). What is most noticeable is the fact that of the participants who did not seek a medical doctor (57%) the majority (62%) sought for a new teacher (see also Table 5.1.3 in Appendix C). This may be interpreted as a possible indication of the expertise expected of a piano teacher. It may also be interpreted as the inability of piano students (and musicians in general) to trust their personal judgements regarding any problems of a somatic or pianistic nature, which may stem from an ongoing educational ethos of major dependence on the piano teacher. In either of these assumptions, referral to a general health expert becomes part of a piano teacher's necessary and expected knowledge (Turon, 2000). This is reinforced by the fact that of those participants who went to a medical doctor, only 14% sought a new teacher, while of those participants who did not go to a medical doctor the percentage

choosing a new teacher was 62%. Similarly, the percentage of participants who sought a medical doctor as well as an alternative doctor was 7%, while the percentage of those participants who did not seek a medical doctor and sought an alternative doctor was 19%. Interestingly, the second most popular choice for participants who did not consult a medical doctor was that of an alternative practitioner (26%) which may indicate a preference in the desire for symptomatic relief (usually through massage, acupuncture, acupressure etc.) rather than the will to find a cause (usually through somatic or pianistic re-education).

Question 6

- Chronologically, was your piano related physical problem close to:
    - A change of technique
    - A change of posture
    - A change of repertoire
    - A preparation for exam
    - A preparation for performance
    - An injury/accident

As can be seen in Figure 5.1.6, the piano related physical problem usually occurs chronologically during exam preparation (68%) and less during preparation for public performance (24%) or during change of technique (19%). The majority of physical problems arising during the preparation for an exam, when seen through a somatic lens, may indicate the determinative impact of the coexistence of many different factors in physical problems such as stress, anxiety, irregularity in practice routine, aggravation of already existing physical problems. Interestingly, change of posture is hardly attributed at all (1%) which may either mean that a) change of posture does not contribute to improvement or aggravation of physical problems, or b) students are not trained to be kinaesthetically aware of their posture and cannot make this kind of connection.

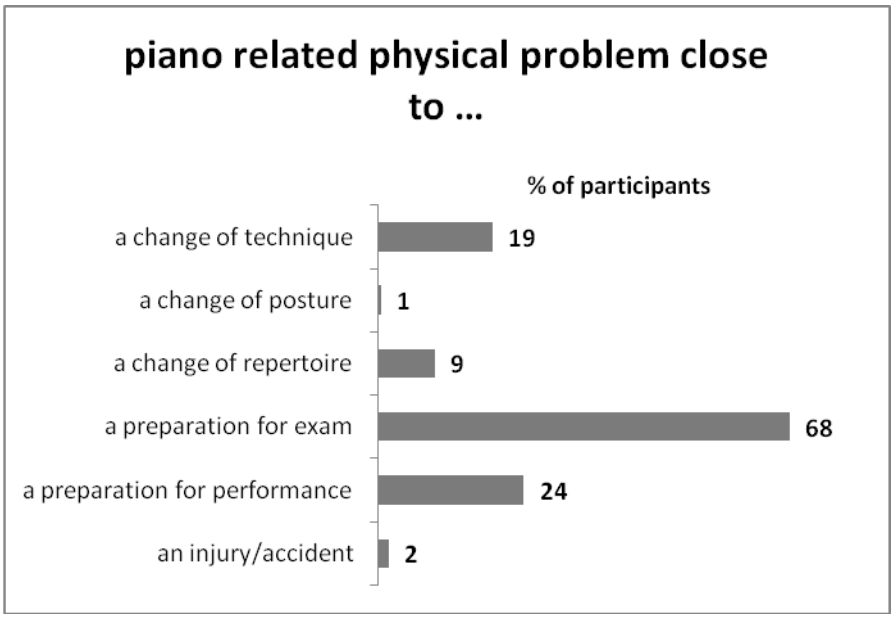

Figure 5.1.6 Possible reason for piano-related physical problems

Question 7

- Where in your body do you experience difficulties (technical problems, fatigue or pain) when you practice, perform or teach the piano?

As is shown in Figure 5.1.7, the majority of participants reported problems in the forearms (89%) and shoulders (85%). There is also a high occurrence in the back of the neck (57%), middle (57%) and lower back (52%) and the fingers (40%). The occurrence of musculoskeletal problems in various areas of the arms and the shoulder girdle indicate the existence of wrong use of the muscles in these areas – faulty technique – or of a natural predisposition of pianists for musculoskeletal disorders in these areas. This statistical result reinforces the fact that the majority of pianists experience problems related to their playing.

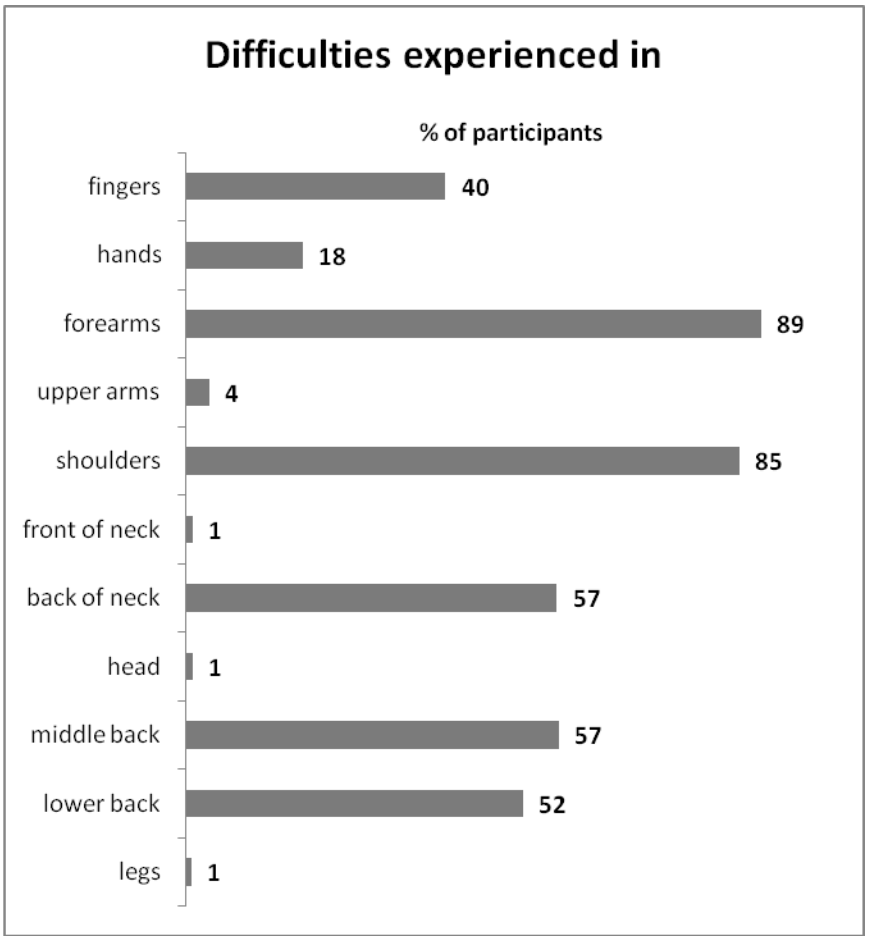

Figure 5.1.7 Anatomical areas where piano-related problems occur

5.1.4 Questions on somatic education

This group of questions aims at evaluating the experience and background of participants in somatic education. This group of questions also aims at answering the main research questions of this thesis that shed light on the impact that somatic education can have on piano performance.

Question 8

- Previous knowledge or acquaintance (even non-regular) with Somatics:

Question 8 enquires about the exposure of participants to any of the somatic methods. At this stage of the questionnaire 'knowledge' does not signify regular practice or thorough knowledge of any somatic method; it aims to identify whether participants were at all acquainted with the general concept of somatic education, through having practiced a somatic method irregularly or even having read casually about it. In addition, as with every multiple choice question, participants were free to circle as many options as they wanted. The data (Figure 5.1.8) reveals that most participants who have encountered a somatic method either regularly or non-regularly have done so through Yoga (82%) or the Pilates Method (82%). Although the data resulting from this question show significant statistical differences, the geographical factor needs to be taken into consideration. During the time of delivery of the workshops (2009-2012) there were four accredited Alexander Technique teachers in Greece, only one of whom resided in the North of Greece, where the workshops were conducted. On the other hand, there were a multitude of forms of Yoga practice and teaching and many accredited and non-accredited Yoga affiliations in Greece. Yoga classes can also be found as part of gym programmes. Similarly, the Pilates Method has seen an exponential rise in demand and practice (see Chapter 2.2) and, as a result, Pilates studios are abundant in the North of Greece. The majority of participants possess previews knowledge or are acquainted with at least one somatic method. This means that the theoretical material taught in the workshop was not new knowledge. In this sense, this was an ideal circumstance for evaluation and completion of the questionnaires.

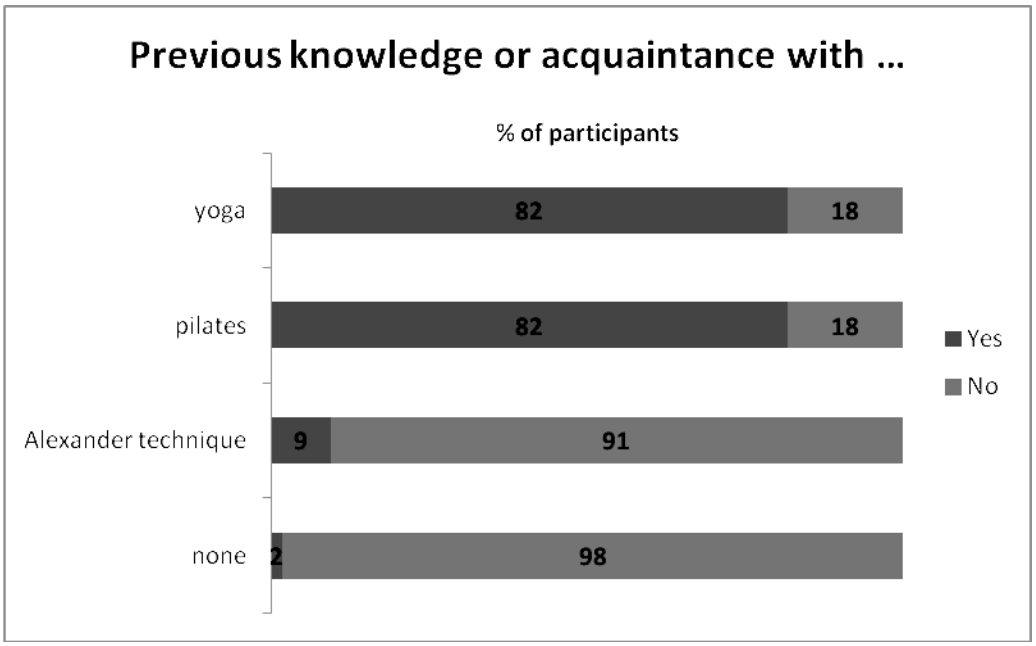

Figure 5.1.8 Participants' previous somatic knowledge

Question 9

- Following this workshop, would you include a somatic method in your daily routine?

The high percentage of participants (96%) who express a desire to include a somatic method in their daily routine (Appendix C, Figure 5.1.9) may be an indicator of one or many of the following amongst many possibilities:

- They are already pursuing a somatic method (as seen in question 10 this percentage is 35%)
- They were satisfied or convinced from the daily workshop that somatic education can enhance their general performance or piano performance in particular
- They are open to new suggestions relating to their piano playing
- They want to please the teacher/presenter in their responses

Given the varying pianistic capacities of participants the positive outcome of this question supports the fact that, if somatic education was to be offered as part of a curriculum, piano students, amateurs, professionals, soloists, accompanists and teachers would enrol in the lessons.

Question 9.1

- If YES, which one method would you choose?

Almost half of the participants (49%) would choose the Alexander Technique, a comparable number of participants (36%) would choose Yoga and 16% would choose the Pilates Method (Figure 5.1.10 below). These statistical results may reflect, amongst other things, participants' understanding of the three somatic methods either through their previous knowledge or through their exposure to basic principles of the methods in the workshop. The results may also reflect the suitability of the different somatic methods to each participant and the suitability of the different somatic methods to the purposes of improving piano performance or general well-being. In addition, there is the possibility that, as the only presenter of this workshop, I have unintentionally directed participants to favour one method over the other two either through my phraseology, vocal intonation, body language or any aspect of my general comportment. This result is potential material for future research as to which somatic method is more appropriate for enhancing piano performance.

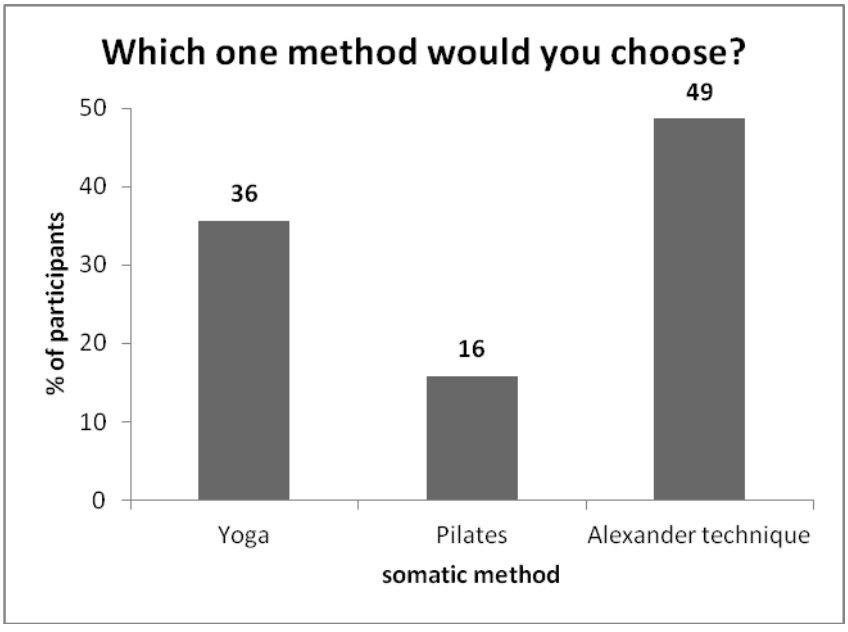

Figure 5.1.10 Participants' preferable somatic method

Question 10

- Are you already pursuing a somatic method?

This question was devised in order to divide the sample into two categories (Figure 5.1.11 below): The first category of participants are not pursuing a somatic method (65%) on a regular basis and their later evaluations have advantages as to their critical thinking in choosing somatic procedures that suit them (through one of the three somatic methods proposed in the workshop). The second category of participants (35%) have had extended experience in one of the somatic methods.

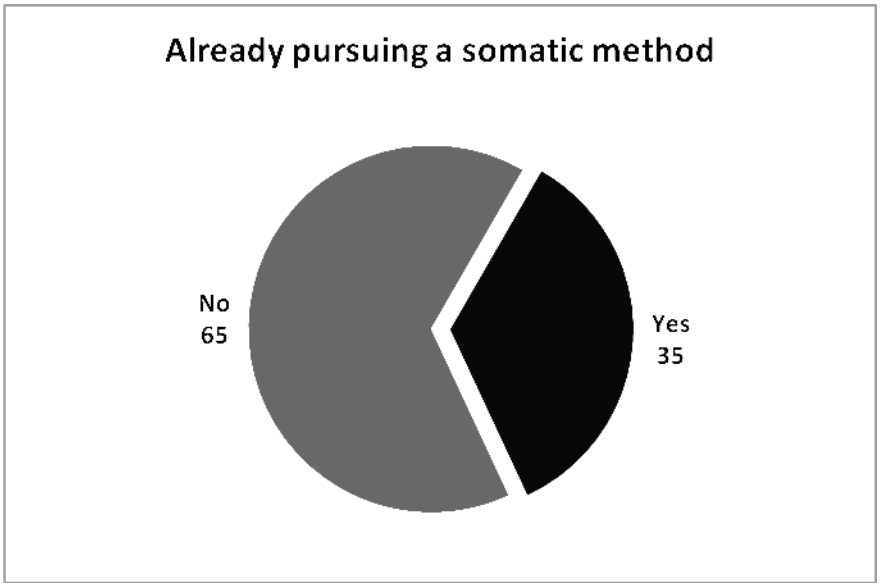

Figure 5.1.11 Participants already pursuing a somatic method

Question 10.1

- If YES, which one?

Questions 10.1, 10.2 and 10.3 were answered by those participants who are already pursuing a somatic method (35%). These questions and the sub-questions in 10.3 aim to shed light on the research questions that inquire on the impact of somatic education on pianistic aspects more specifically, and their importance originates from the long-term exposure of subjects to their chosen somatic method. 35% of the participants are already pursuing a somatic method. Of the participants who are already pursuing a somatic method, the majority (57%) attend lessons in the Pilates Method, many (34%) attend lessons in Yoga and fewer participants (8%) attend lessons in the Alexander Technique (Figure 5.1.12 below). The differences in statistical results in question 10.1 and 9.1 may be an indicator of the following: The percentage of participants who would choose the Alexander Technique in question 9.1 was 49%, but in question 10.1 it can be seen that of those participants who actually pursue a somatic method only a very small percentage (8% of the 35% who pursue a somatic method) actually receive lessons in the Alexander Technique. On the other hand, the percentage of participants who would choose the Pilates method in question 9.1 was only 16% while, in question 10.1, of those participants who already pursue a somatic method more than half (57% of the 35%) of the participants receive lessons in the Pilates Method. Interestingly, the percentage of participants who would choose to follow Yoga is the same in the whole sample and in the second category of participants (35% of the whole sample).

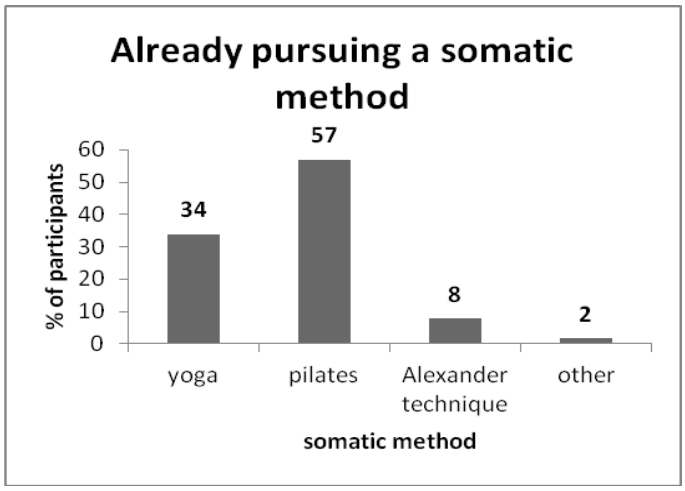

Figure 5.1.12 Somatic methods pursued by participants

In addition, Table 5.1.4 shows the somatic method of choice of participants who are already pursuing a somatic method (regardless of which somatic method they are already pursuing). Columns list participants in three categories according to the somatic method which they are already pursuing, while rows list results according to the somatic method which the participants would follow after having attended the workshop. Interestingly, 59% of those participants that already attend Yoga classes would still choose Yoga while 39% of these would turn to the Alexander Technique and one pianist would turn to the Pilates Method. On the other hand, only 28% of participants that already attend classes in the Pilates Method would still choose it as their preferred method while the majority of participants that already attend classes in the Pilates Method (54%) would choose the Alexander Technique and a minority (18%) would choose Yoga. Finally, participants who are already attending classes in the Alexander Technique would not change their preferred somatic method.

A possible interpretation of these results is that Yoga and the Alexander Technique are somatic methods that are preferred by pianists, which may be an indicator of the suitability of these somatic methods to the enhancement of piano performance or/and general well-being. Another possible interpretation is that up to the present no research has been done in the application of the Pilates Method to piano performance. The percentage of participants (28%) that receive lessons in the Pilates Method and would choose it as their preferred somatic method is significant (1 in 3 pianists). This statistic possibly offers fertile ground for further research into the suitability of the Pilates Method to pianists.

		Already pursuing a somatic method					
		Yoga		Pilates Method		Alexander Technique	
		Count	Column N %	Count	Column N %	Count	Column N %
Which somatic method they would follow	Yoga	26	**59.1**	13	**17.6**	0	**.0**
	Pilates Method	1	**2.3**	21	**28.4**	0	**.0**
	Alexander Technique	17	**38.6**	40	**54.1**	10	**100.0**
	Total	44	100.0	74	100.0	10	100.0

Table 5.1.4 Choice of somatic method regardless of the somatic method already pursued

Question 10.2

- Do you deal with issues arising from piano practice and performance during your chosen somatic method session?

This question was designed to examine the current content of somatic education in piano performance as a general concept. It prepares the differentiation of two kinds of benefits that may occur from practising a somatic method: general benefits (general well-being, general improvement in movement) and specific benefits (task-specific movements such as playing the piano). Piano performance can benefit from either of the two processes (general or specific), but the most beneficial results are apparent when both general and specific tasks are addressed through the practice of a somatic method. The differentiation of the twofold benefits is examined in more detail in question 10.3.

As seen in Figure 5.1.13 and Table 5.1.5, of the participants who attend Yoga or Pilates classes a small percentage deals with issues arising from piano practice and performance while those participants who attend classes in the Alexander Technique deal with pianistic issues (approximately 9 out of 10 participants). As a result, it can be said that the Alexander Technique is a somatic method in which students deal extensively and directly with their pianistic issues, whilst Yoga and the Pilates Method are somatic methods in which students deal with their pianistic issues more indirectly (the noted difference between the Alexander Technique and the other somatic methods is statistically important [$X^2(2)=33{,}163$, $p<0{,}001$]). This result may indicate the suitability of the Alexander Technique in issues of piano performance or it may equally indicate the fact that the potential benefits of Yoga and the Pilates Method have not yet been researched and applied as extensively as is the case in the Alexander Technique, which is also apparent from the extended bibliography on the issue as examined in Part I of the current thesis.

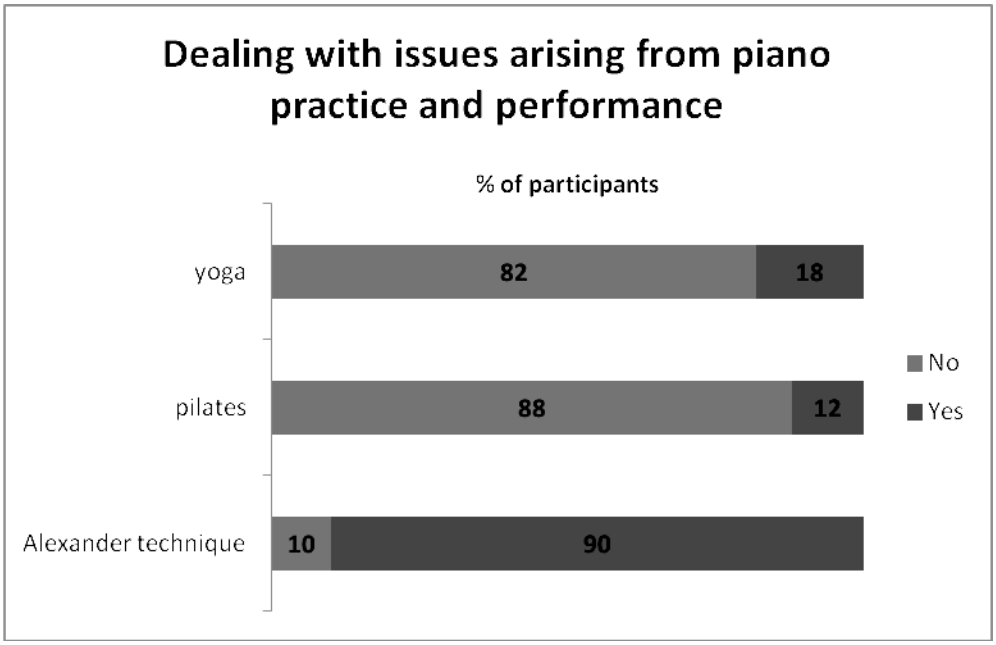

Figure 5.1.13 Participants dealing with pianistic issues during somatic practice

		Already pursuing a somatic method					
		yoga		pilates		Alexander technique	
		Count	Column N %	Count	Column N %	Count	Column N %
Dealing with issues occurring from piano practice and performance	No	36	81.8	65	87.8	1	10,0
	Yes	8	**18.2$_a$**	9	**12.2$_a$**	9	**90.0$_b$**
	Total	44	100.0	74	100.0	10	100.0

Table 5.1.5 Participants dealing with pianistic issues during somatic practice according to the somatic method pursued

Note: Values in the same row and subtable not sharing the same subscript are significantly different at $p < 0.05$ in the two-sided test of equality for column proportions

Question 10.3

- On a scale from 1 to 10 where 1 is NO HELP AT ALL and 10 is FULL RESOLUTION OF ISSUE, in which of the following aspects has your chosen somatic method helped you and how much? (please grade as many or as few options as needed)

This question with ten sub-questions is the most pivotal in the questionnaire as it tests the contribution of somatic education to specific aspects of piano performance for pianists already pursuing a somatic method. As shown in Table 5.1.6, of those participants who are pursuing a somatic method (35% of all the participants) all felt that their chosen somatic method helps them in the ten general and pianistic aspects: general health, musculoskeletal problems, posture at the piano, general stamina, pianistic stamina, general strength, general neuromuscular coordination, pianistic neuromuscular coordination and specific aspects of piano technique. The evaluation was done on a scale from 1 to 10 and the mean score exceeded 7.8 in every aspect. The highest mean score was 8.8 for posture at the piano and the lowest was 7.8 for specific aspects of piano technique. Interestingly, pianists who are pursuing a somatic method on a regular basis realise both the general benefits as well as the specific benefits of somatic education. This evaluation may be interpreted as an indicator of the holistic nature of the three methods examined in the present thesis as all-encompassing disciplines that enhance participants' general health and well-being as well as helping with their specific pianistic skills.

The most significant outcome of this question with ten sub-questions was that the methods of somatic education chosen by the pianists who participated in the workshops have helped them very significantly in resolving specific aspects of piano technique as well as posture at the piano and pianistic stamina, strength and neuromuscular coordination.

		Mean	Standard Deviation
10.3.1	General health	8.2	.97
10.3.2	Musculoskeletal problems	8.0	.88
10.3.3	Posture at the piano	8.8	.69
10.3.4	General stamina	8.1	.93
10.3.5	Pianistic stamina	8.4	1.06
10.3.6	General strength	8.5	.91
10.3.7	Pianistic strength	8.4	1.19
10.3.8	General neuromuscular co-ordination	8.4	1.10
10.3.9	Pianistic neuromuscular co-ordination	8.1	1.49
10.3.10	Specific aspects of piano technique	7.8	1.77

Table 5.1.6 Contribution of somatic education to specific aspects of piano performance

5.1.5 Questions on workshop

Questions 11 to 19 were designed to determine the effectiveness of the workshop in terms of personal evaluation of each participant and in terms of their understanding of the somatic concepts to which they were exposed.

Question 11

- On a scale from 1 to 10 how helpful was this workshop?

The general mean for the evaluation of help provided in the workshop was 9.9 (SD = .51), which means that the participants found the workshop very helpful (Appendix C, Table 5.1.7).

Question 12

- Would you like to see a next series of this workshop?

This question was designed to determine the disposition of the participants towards the attendance and acceptance of the workshop. Almost all participants (98.9%) would like to see a next series of this workshop (Appendix C, Table 5.1.8).

With regards to the present thesis, the results of questions 11 and 12 may be an indicator of the fact that a workshop is an adequate means for disseminating information on somatic education to pianists. On the other hand, this could be an indicator that, lacking a holistic piano curriculum, pianists are eager to enhance their knowledge and experience through secondary educational processes.

Questions 13 – 17

These five questions were designed to evaluate the effectiveness of the workshop in conveying fundamental somatic principles to participants (Appendix C, Table 5.1.9). The answers to these questions are verbalised using the same phraseology as during the workshop and the concept behind every question is analysed theoretically and given at least one practical example. Therefore, in order to avoid open-ended

questions, participants are asked to evaluate these five questions on a scale from 1 to 10.

Question 13 “Is the way we sense our bodies important in piano playing?” examines the importance that a participant lays on the concept of kinaesthesia, the way we sense our bodies in movement. One of the important skills developed during lessons in methods of somatic education is the awareness of one’s body and one’s movements, which asks of students to heighten their awareness levels at all times and during all activities. Although this is achieved in different ways according to the somatic method pursued, the outcome aims at a conscious control of one’s movements, which naturally has implications for piano performance. The mean score in Question 13 was 9.9 (SD = 0.33), which indicates that participants consider the way we sense our bodies as very important. The realisation of the fact that the way we sense our bodies is important in piano playing is an important step to a pianist’s somatic education.

Question 14 “Is muscle power and strengthening important in piano playing?” addresses an important principle in somatic education: Although some strength is naturally needed to play the piano, cultivating strength and using strength exercises as an absolute prerequisite to play the piano is a misunderstanding propounded by the finger piano school (see Chapter 3), which was refuted by the subsequent schools and traditions in piano playing and the refutation was later justified by somatic education specialists who have taught instrumentalists and pianists in particular. A simple proof that muscle power is not an absolute pre-requisite to play the piano is that 3 to 13-years-old wunderkinds manage to play large scale works without possessing fully developed musculoskeletal systems. Therefore, the average score being ‘(4.9)’ indicates that participants have understood the misunderstanding that lies at the heart of the much debated muscle strengthening in building a solid piano technique. The high Standard Deviation (2.36) is an indication of the controversial nature of this piece of information conveyed in the workshop. As it lies at the core of understanding the fundamentals of piano playing, there is an apparent need for further research into the application of successful training on this vital element of piano technique and instrumental technique in general.

As regards question 15 “Are ergonomics important in piano playing?” the principle taught during the workshop is that correct ergonomics can determine ease and comfort in playing or, equally, wrong ergonomics can prevent a pianist from moving at all and, in extreme cases, prolonged practice in non-ergonomic circumstances can be the cause of injury. The mean score of 9.7 (SD = 0.70) indicates that the majority of the participants have understood the importance of ergonomics in piano playing.

In question 16 “Is the way we sit important in piano playing?” the contextual relevance with the workshop material is in the word ‘way’ which concerns the manner, the use and the attitude a pianist has towards sitting. As mentioned in the analysis of question 14, ergonomics are important in piano playing. But, good ergonomic proportions cannot determine the way in which a pianist plays the piano. A pianist in the best ergonomic conditions can still manage to perform in ways that are counter-productive and even harmful. An important amount of time is dedicated to explore this issue somatically during the workshop and any answer from 6 to 10 indicates that the participant has understood the significance of sitting in piano playing. The mean score for question 16 is 9.9 (SD = 0.35) which indicates that participants have understood the importance of the manner of sitting in piano playing.

In question 17 “Does the way we move our bodies influence the way we move our fingers in piano playing?” the somatically correct answer is ‘yes’. Similarly to the previous question, the word ‘way’ addresses the manner, the attitude in which pianists move and think of their bodies. This question indirectly addresses the importance of somatic understanding of oneself in piano playing. Therefore, any answer from 6 to 10 indicates that the participant has understood that general movement affects specific movement. The mean score in Question 17 is 9.4 (SD = 0.94), which indicates that participants have understood an important concept of somatic education, namely that the general condition of our body influences the condition of any specific parts regardless of the activity in which we engage.

In retrospect, questions 13 to 17 would have yielded more constructive results if they had also been posed to pianists before their participation to the workshop. In that way, the exposure of somatic information on pianists could have been evaluated more effectively as to their understanding of how somatic a process piano playing is.

Question 18

- How likely are you to follow a somatic method?

The majority of participants reports that they are very likely to follow a somatic method. The mean score in this question is 9.6 (SD = .91). The statistical results of this question indicate both the impact of the workshop as a means of encouraging pianists to pursue a somatic method as well as the pure evaluation of pianists with regards to the benefits of somatic education (Appendix C, Table 5.1.10).

Question 19

- Following this workshop, can you see your chosen somatic method helping you with your pianistic issues?

The majority of participants (97%) replied positively, i.e. they can see their chosen somatic method helping them with their pianistic issues (Appendix C, Figure 5.1.14). This question asks participants to evaluate the effectiveness of the workshop but, most importantly, it serves the purpose of answering the main research question of the present thesis in asking participants to evaluate somatic education with regards to its impact on pianistic issues. As has been examined in Chapters 1 and 2, methods of somatic education are generally adopted due to their conducive role to health and well-being in general. This question forms the central part of this thesis by distinguishing pianistic issues from all other forms of activity and movement.

5.1.6 Questions evaluating somatic education

Questions 20 to 23 are designed to test participants' evaluation of somatic education as related to its effectiveness in piano performance and its inclusion in a comprehensive piano curriculum.

Question 20

- How much is somatic education linked to piano technique?

The majority of the participants replied positively evaluating that somatic education is linked to piano technique (Figure 5.1.15 below). This question relates directly to the main research question of the thesis. Unlike question 19, it seeks the participants' objective view of the relationship between somatic education and piano technique.

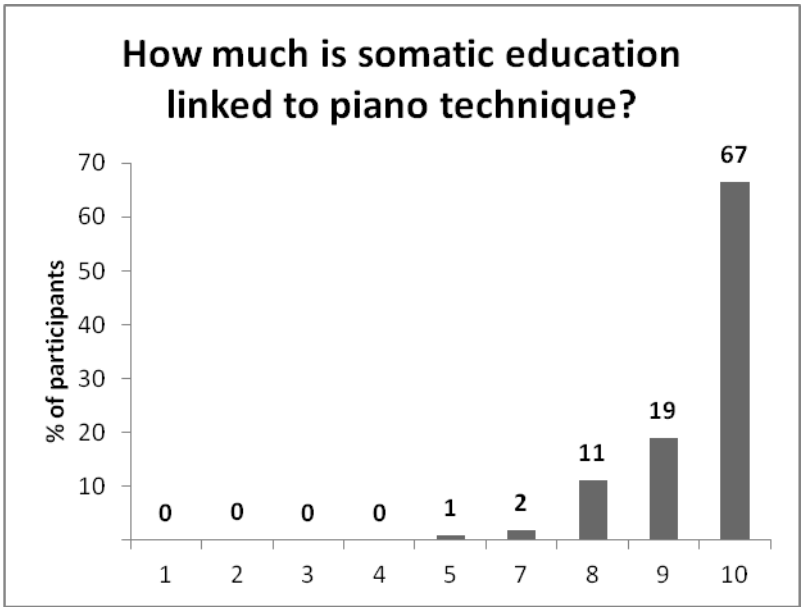

Figure 5.1.15 Evaluation of somatic education in relation to piano technique

Question 21

- Following your attendance in this workshop do you feel that somatic education should be part of:

This question was devised in order to answer one of the main research questions related to the stage of education which is more adequate for pianists to accept and receive somatic information. As shown in Figure 5.1.16, the majority of participants feel that somatic education should be part of piano teacher training (89%), university piano lessons (79%) and conservatoire piano lessons (71%). Fewer participants feel that somatic education should be part of private lessons in general (45%) and private lessons to children in particular (37%).

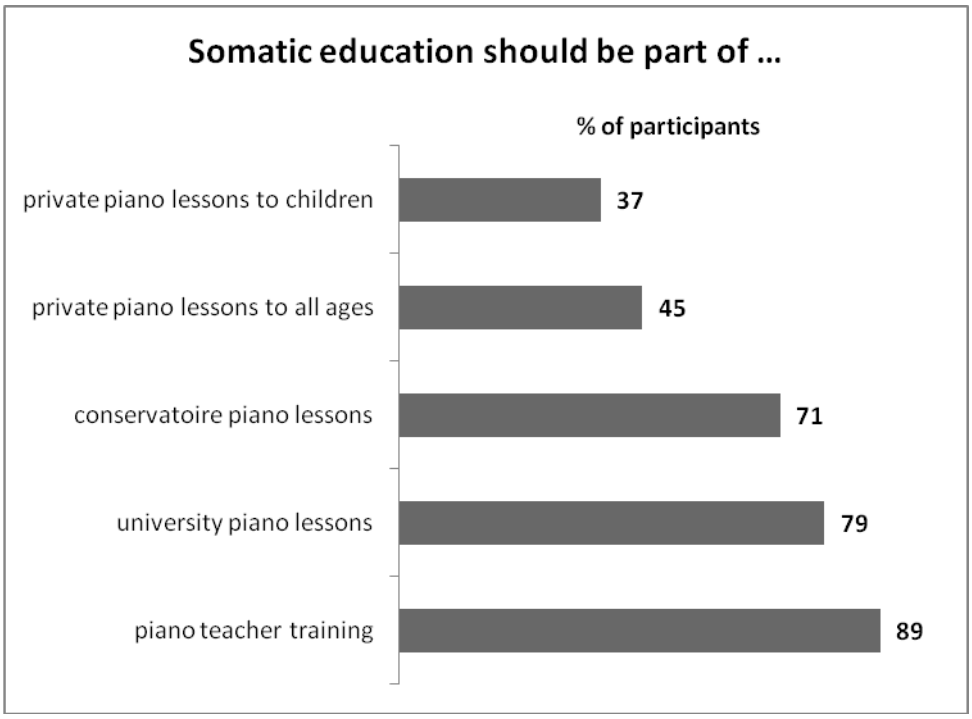

Figure 5.1.16 Evaluation of somatic education in relation to stages of piano education

In addition, Chi-square test was used to estimate the relationship between those participants that are already pursuing a somatic method and those that are not yet pursuing a somatic method (Figure 5.1.17 and Table 5.1.11). All the differences are statistically important. Of those participants who feel that somatic education should be part of piano teacher training, the majority (96%) is formed by those who are already pursuing a somatic method. However, the percentage of those participants who are not yet pursuing a somatic method (86%) is equally important. The percentages in piano teacher training being higher in both groups may indicate that somatic education is viewed as a discipline that should form part of a piano teacher's knowledge, regardless of whether it forms part of formal piano curriculum or not. Of those participants who feel that somatic education should be part of university and conservatoire lessons the differences between the two groups (not yet pursuing a somatic method and already pursuing a somatic method) are statistically important; however, the lowest percentage of participants is 62%, which still forms a majority within that category. This may be an indicator that in the two formal stages of education (conservatoire and university) somatic education is seen as a discipline that should be part of the piano curriculum. Finally, the differences in percentage seen in the views of participants in both groups in regard to private piano lessons are the most significant in this graph. This may be an indicator of the fact that participants who already have experience in a somatic method can envisage somatic knowledge being incorporated in private piano lessons to children and adults, in contrast with those participants who do not have experience in a somatic method (except for their participation to the workshops) and whose understanding of piano performance is mainly through a third-person perspective. In general, the evaluation of participants shows that somatic education would more adequately be part of piano pedagogy of a specialised nature rather than during the first steps of learning the piano. This is a view that is not shared by the interviewees as will be seen below; in their majority the interviewees reported that somatic education should be part of piano curricula from the beginning of a pianist's learning process.

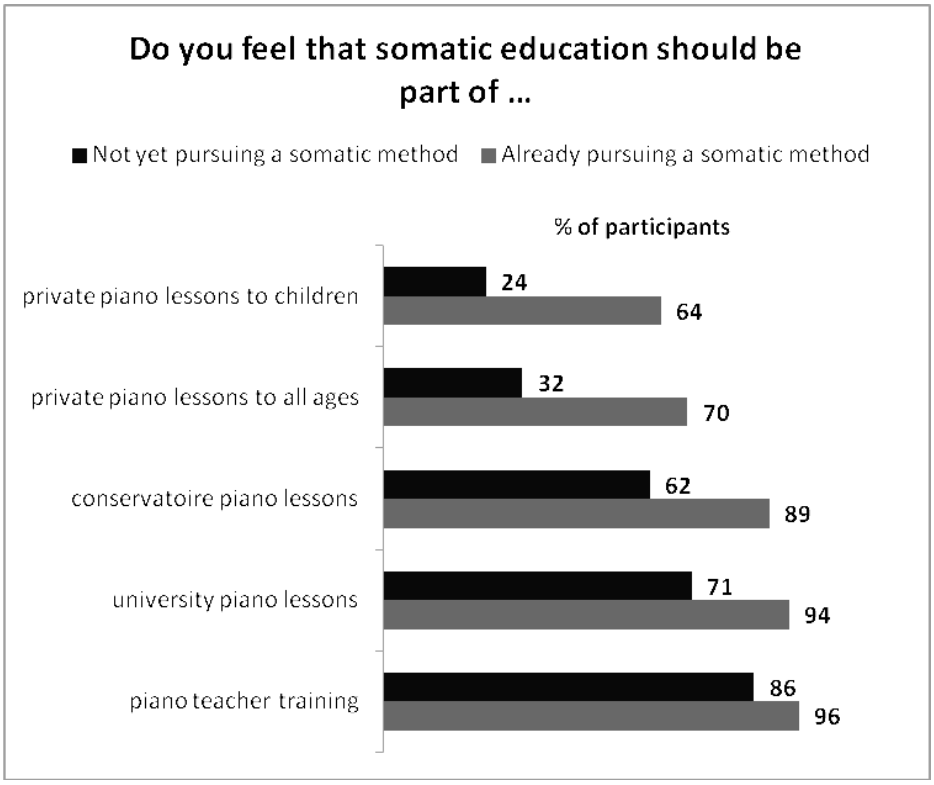

Figure 5.1.17 Evaluation of somatic education in relation to stages of piano education in participants who already pursue a somatic method and those who do not

Do you feel that somatic education should be part of		Already pursuing a somatic method				
		No		Yes		
		Count	Column N %	Count	Column N %	Pearson Chi-square test
private piano lessons to children	No	189	76.2	47	35,6	$X^2(1)= 60.348$, $p<0.001$*
	Yes	59	**23.8**	85	**64.4**	
	Total	248	100.0	132	100.0	
private piano lessons to all ages	No	168	67.7	39	29.5	$X^2(1)= 50.680$, $p<0.001$*
	Yes	80	**32.3**	93	**70.5**	
	Total	248	100.0	132	100.0	
conservatoire piano lessons	No	95	38.3	14	10.6	$X^2(1)= 32.314$, $p<0.001$*
	Yes	153	**61.7**	118	**89.4**	
	Total	248	100.0	132	100.0	
university piano lessons	No	71	28.6	8	6.1	$X^2(1)= 26.645$, $p<0.001$*
	Yes	177	**71.4**	124	**93.9**	
	Total	248	100.0	132	100.0	
piano teacher training	No	35	14.1	5	3.8	$X^2(1)= 9.751$, $p<0.002$*
	Yes	213	**85.9**	127	**96.2**	
	Total	248	100.0	132	100.0	

Table 5.1.11 Evaluation of somatic education in relation to stages of piano education in participants who already pursue a somatic method and those who do not

Question 22

- Following your attendance in this workshop do you feel that somatic education can enhance
    - Piano practice
    - Piano teaching
    - Piano interpretation

This question explores the impact of somatic education on the various components of piano performance, namely practice, teaching and interpretation. The majority of the participants (95%) feel that somatic education can enhance piano practice and a significant percentage (73%) feel that somatic education can enhance piano teaching. Less than half of the participants (42%) feel that somatic education can enhance interpretation at the piano (Figure 5.1.18). Piano practice is the process through which pianists grow and evolve. As it is done individually, the responsibility for the process and the outcome is realised from an early stage. It is most likely that this responsibility helps pianists to sense a common ground in the practice of somatic methods and thus view practice as an opportunity to incorporate new self-instigated knowledge. Teaching is a process where both teachers and students can experience growth on a pianistic level and can envisage the contribution of somatic education to the growth of knowledge conveyed and acquired. Interpretation, however, is considered as the outcome of the former two components of piano performance and is usually learned and experienced as a separate artistic process, which may explain the reluctance in most participants to consider it as a skill viable to improvement through somatic education.

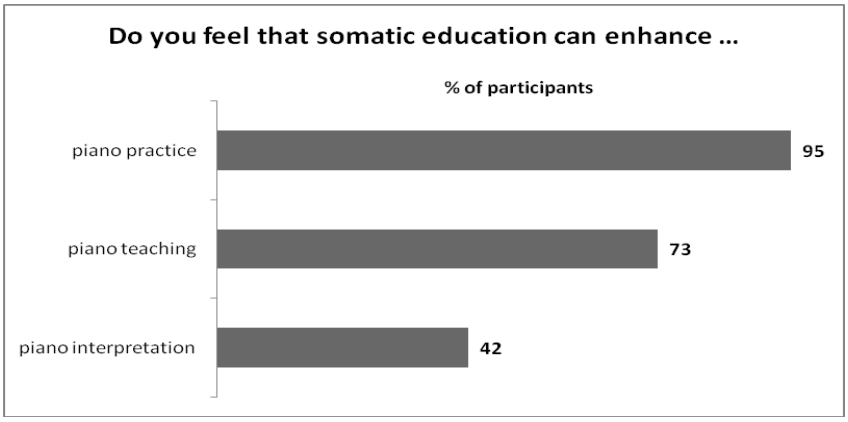

Figure 5.1.18 Evaluation of somatic education in relation to components of piano performance

In addition, Pearson Chi-square test was used to estimate participants' views depending on whether they are pursuing a somatic method or not (Figure 5.1.19 and Table 5.1.12). Some differences are statistically significant with more apparent difference in opinions in the components of piano teaching and piano interpretation. In piano practice, the difference between the two groups (not yet pursuing a somatic method and already pursuing a somatic method) is not striking as piano practice is more closely related to the first-person perspective somatically as well as artistically. In piano teaching, participants already pursuing a somatic method feel in their majority (98%) that somatic education can enhance teaching. In fact, this percentage (98%) is the same in the evaluation of piano practice and piano teaching. Fewer participants (60%) not yet pursuing a somatic method feel that piano teaching can be enhanced by somatic education. Although this number still forms the majority of participants, it shows a substantial difference between the views of people who are regularly engaged in somatic education and those who have only just been initiated into it. The most significant difference between participants who already pursue a somatic method and those who do not is in piano interpretation. This significant difference may indicate that in order for pianists to experience the benefits of somatic education for piano interpretation they would need to have extended experience in a somatic method. At a personal evaluation level, I have experienced both in myself and my students a gradual realisation of the benefits of somatic education on piano interpretation. This occurs due to the fact that interpretation involves artistic skills that are mainly considered part of a pianist's psychology. As such, these skills find a fertile environment in which to flourish when principles of Somatic Education have been understood and applied in the long term. As has been analysed in Chapter 2, somatics as a field encourages performing artists to engage holistically in their art, an act which takes time, consistency and persistence in the study of a somatic method, whether it is done as part of the practice of one's art or as a separate discipline. The present questionnaire did not enquire into the amount of time during which participants were involved in learning a somatic method, a variable which offers a new dimension for further research into the relation between the time of exposure and the gradual realisations of the student of a somatic method on their respective art.

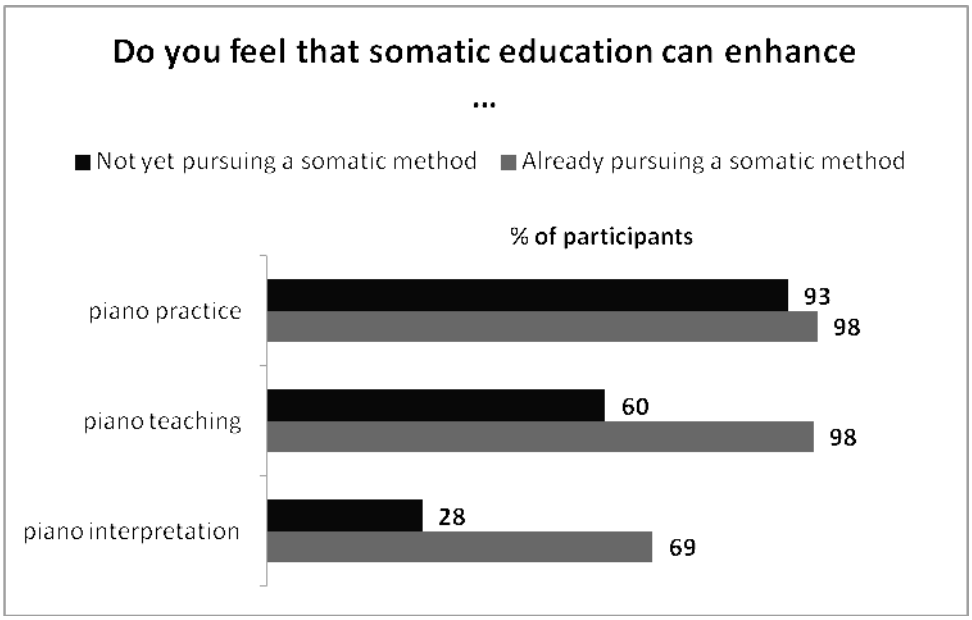

Figure 5.1.19 Evaluation of somatic education in relation to components of piano performance in participants who pursue a somatic method and those who do not

Somatic education can enhance		Already pursuing a somatic method: No Count	No Column N %	Yes Count	Yes Column N %	Pearson Chi-square test
piano practice	No	17	6.9	2	1.5	$X^2(1)= 5.171$, p<0.023*
	Yes	231	**93.1**	130	**98.5**	
	Total	248	100.0	132	100.0	
piano teaching	No	98	39.5	3	2.3	$X^2(1)= 61.233$, p<0.001*
	Yes	150	**60.5**	129	**97.7**	
	Total	248	100.0	132	100.0	
piano interpretation	No	179	72.2	41	31.1	$X^2(1)= 59.746$, p<0.001*
	Yes	69	**27.8**	91	**68.9**	
	Total	248	100.0	132	100.0	

Table 5.1.12 Evaluation of somatic education in relation to components of piano performance in participants who pursue a somatic method and those who do not

Question 23

- Following your attendance in this workshop do you feel that somatic education can help with:
    - Aural perception
    - Expression
    - Performance
    - Memorisation
    - Stage fright
    - Technique

The majority of participants (95%) feel that somatic education can enhance piano technique (Figure 5.1.20). Another statistically important figure is the percentage of participants who feel that somatic education can help with stage fright (56%). In descending order of evaluation 22% feel that somatic education can enhance expression, 16% feel that it can enhance performance, 14% feel that it can enhance aural perception and 12% feel that it can enhance memory. The six pianistic skills mentioned in this question all form and integral part of piano playing and are studied during the workshops within the frame of somatic education. Based on the claims of authors and practitioners of somatic methods (in Yoga, the Pilates Method or the Alexander Technique) these six pianistic skills are examined directly or indirectly, as it has been observed in the respective chapters (Chapter 2.2 for the Pilates Method, 2.3 for Yoga and 2.4 for the Alexander Technique). Students are encouraged to experiment with a skill that concerns them and the applications of somatic education in relation to that skill are then discussed in the form of a group lesson (masterclass format).

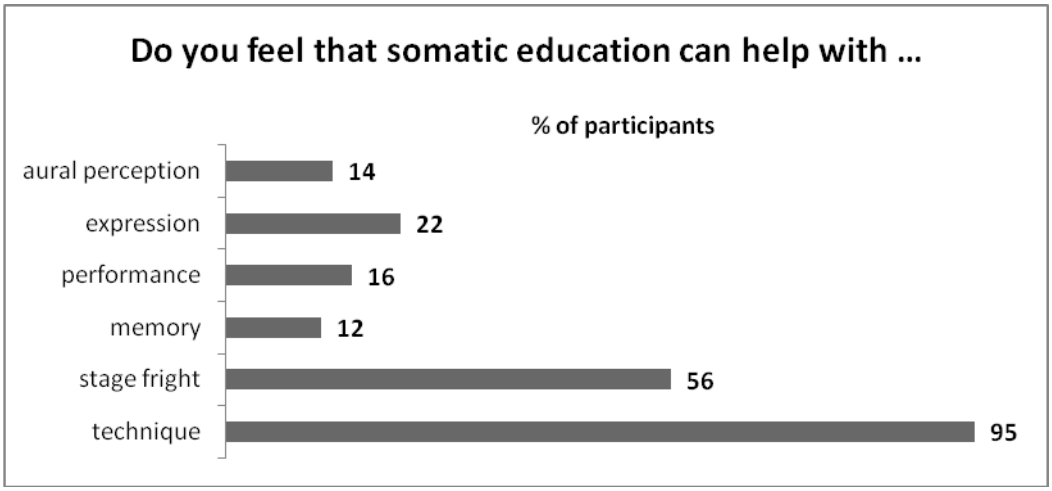

Figure 5.1.20 Evaluation of somatic education in relation to musical skills

An interesting outcome of this question for the purposes of the present thesis is shown in the combinational graph that follows (Figure 5.1.21), where the answers have been examined according to whether participants are already pursuing a somatic method on a regular basis or not (see also, Appendix C, Table 5.1.13).

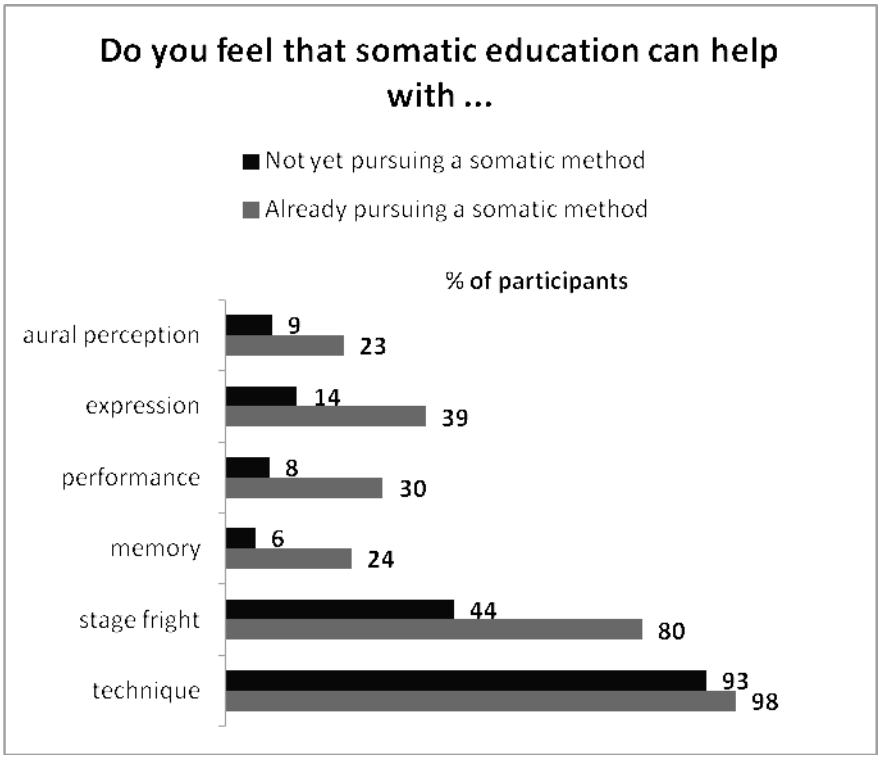

Figure 5.1.21 Evaluation of somatic education in relation to musical skills in participants who pursue a somatic method and those who do not

Interestingly, piano technique is viewed as a skill that can be enhanced by somatic education by the majority of participants already pursuing a somatic method (98%) as well as by the majority of participants that are not yet pursuing a somatic method (93%). This evaluation was tested in question 20 individually, and interestingly the percentage was lower (67%). Piano technique can be considered as a form of intricate, choreographed movement (see Chapter 3) and its analysis both theoretically and practically is easily and often demonstrated during the course of a workshop. The same does not apply with the other skills which need a prolonged exposure to somatic education in order for pianists to see results, a fact that is apparent in the graph especially by observing the differences in evaluation by the two groups of participants. The statistical differences that occur as a result of exposure to a somatic method are significant. In particular, of the participants already pursuing a somatic method on a regular basis the majority (80%) feel that somatic education can help with stage fright, while of those participants not pursuing a somatic method on a regular basis fewer than half (44%) feel that somatic education can help with stage fright. The differences in participants' views in the remaining pianistic skills in relation to their exposure to somatic methods are proportionate. In descending order of evaluation, of those participants who are pursuing a somatic method on a regular basis 39% feel that somatic education can enhance expression while of those participants who are not pursuing a somatic method on a regular basis only 14% feel that somatic education can enhance expression. Of those participants who are pursuing a somatic method on a regular basis 30% feel that somatic education can enhance performance while of those participants who are not pursuing a somatic method on a regular basis 8% feel that somatic education can enhance performance. Of those participants who are pursuing a somatic method on a regular basis 24% feel that somatic education can enhance memory while of those participants who are not pursuing a somatic method on a regular basis only 6% feel that somatic education can enhance memory. Finally, of those participants who are pursuing a somatic method on a regular basis 23% feel that somatic education can enhance aural perception while of those participants who are pursuing a somatic method on a regular basis only 9% feel that somatic education can enhance aural perception.

In general all the statistical differences that occur between the two groups of participants are significant except in the case of technique. Participants' views on somatic education in relation to pianistic aspects (aural perception, expression, interpretation, performance, memory, stage fright) present a difference depending on whether participants are already pursuing a somatic method or not. One important consideration with regards to the evaluation of this question in general can be seen through examination of both the general graph and the combinational graph: the proportionate evaluations do not differ between the two groups. In descending order all participants feel that somatic education can help with technique to a great extent and stage fright, expression, performance, aural perception and memory to a lesser extent. This may be an indication of the fact that somatic education can help with the more physical aspect of piano playing, which is technique, rather than the more emotional (stage fright, expression, performance) or intellectual (aural perception, memory) aspects of piano playing. Another important consideration is that in the case of all the pianistic aspects except from technique the evaluations of the participants who are already pursuing a somatic method are in general more than double in comparison to the evaluations of the participants not pursuing a somatic method. As these differences are statistically very important one cannot ignore the fact that exposure to a method of somatic education on a regular basis can enhance all aspects of piano playing.

5.1.7 Summary of results

385 questionnaires completed by pianists of all ages and pianistic development yielded interesting results with regards to the present thesis. The questionnaire was categorised into general questions, questions on piano playing, questions on somatic education, questions on the workshops and evaluations of somatic education.

Most of the participants reported having technical obstacles and experiencing fatigue and the majority sought for a new teacher or a medical doctor in order to resolve these problems. This was seen as an ongoing tendency in pianists to consider themselves in a dualistic manner, regardless of the ubiquitous access that most modern societies have to information that encourages somatic considerations. Almost two thirds of the participants experience physical problems during a preparation for exams, which may be a possible indication of the holistic nature of pianistic problems which will occur in a combination of circumstances such as stress, anxiety etc. Physical problems of pianists have been reported to occur mainly in the forearms and shoulders, which may indicate faulty piano technique or natural predisposition to injuries.

All of the participants had some basic knowledge or acquaintance with one somatic method, which meant that the material taught was not entirely new and unknown. The great majority of the participants would include a somatic method in their daily routine and almost half of them would choose the Alexander Technique, one third of the participants would choose Yoga while one fifth would choose the Pilates Method. Of those participants who are already pursuing a somatic method, more than half receive lessons in the Pilates Method. However, mainly those participants who receive lessons in the Alexander Technique deal with pianistic issues during their somatic lessons.

Of those participants who receive regular instruction in a somatic method, all feel that somatic education helps in issues of general health, stamina, strength, neuromuscular coordination and musculoskeletal problems. Most importantly, all participants feel that somatic education helps with posture at the piano, pianistic stamina, strength and neuromuscular coordination and with specific aspects of piano technique. This

statistical result addresses the research question "Which components of piano performance can benefit from somatic education? (e.g. general components such as practice, teaching, interpretation and specific components such as memorisation, stage fright, technique, etc.)" positively and offers opportunities for further research into the particulars of piano performance in relation to somatic education.

In evaluating the workshops of Somatics for Pianists© the majority of participants found the workshop very helpful, would like to see a next series of the workshop, are likely to follow a somatic method and feel that somatic education can help with their pianistic issues. They have also shown to have benefited from the conceptual framework of the workshop, by answering correctly to brief questions of a somatic nature, which is an indication of the fact that a series of workshops could be a potential means of conveying somatic information to pianists, which partly answers another research question: "what are the effective means of introducing somatic education to pianists?"

The majority of the participants feel that somatic education is linked to piano technique and that it should mainly be part of piano teacher training, university piano lessons and conservatoire piano lessons, thus answering the research question "At which level of their education are pianists more open to receiving and accepting somatic information?" The majority of the participants feel that somatic education can enhance piano practice and teaching and, to a lesser extent, interpretation. The majority of participants also feel that somatic education can enhance piano technique, half feel that it can help with stage fright and to a lesser extent expression, performance, memorisation and aural perception, which confirms the research question "Which components of piano performance can benefit from somatic education? (e.g. general components such as practice, teaching, interpretation and specific components such as memorisation, stage fright, technique, etc.)". Thus the evaluation of somatic education by 385 participants shows that somatic education could potentially contribute substantially to all components of piano performance through a teaching curriculum at a specialised level of piano pedagogy.

5.2 Interviews

5.2.1 Description of interview process

Following the analysis of data from the questionnaires, a set of interview questions was devised to enhance the results of the initial survey and to offer an insider's perspective of the contribution of somatic education to piano performance. The internet search yielded eleven relevant piano teachers who were also experts in methods of somatic education. Of these teachers, only four responded to my initial contact and agreed to be interviewed; these were piano teachers who are also experts in Yoga and the Pilates Method. As no reply came back from any piano teachers who are also trained in the Alexander Technique, I had to search for them through a wider circle of Alexander Technique teachers and through personal contacts. Two piano teachers responded and agreed to be interviewed. Therefore, six piano teachers, two per each somatic method, were interviewed. All interviewees preferred the email interview and replied promptly. Anonymity was guaranteed according to the agreement with each respective interviewee; they will thus be referred to as interviewee 1, 2, 3, 4, 5 and 6. The gender and geographic location were not taken into consideration as a criterion of selection as the interviewees were too few to allow for this. The first seven questions of the interview yielded results about the interviewees' educational and teaching experience both in piano and somatic education. In general all six interviewees are experienced piano teachers and also have experience in teaching their respective method of somatic education. Two piano teachers have specialised knowledge in the Alexander Technique, two piano teachers have specialised knowledge in the Pilates Method and two piano teachers have specialized knowledge in Yoga. The complete interviews as sent by email can be seen in Appendix D.

More specifically, one interviewee was male and five were female. The geographical locations were Italy, the US, Greece and the UK.

Interviewee	Gender	Location	Somatic Method
1	Female	United Kingdom	Alexander Technique
2	Female	United Kingdom	Alexander Technique
3	Female	Greece	The Pilates Method
4	Female	United States	The Pilates Method
5	Female	United States	Yoga
6	Male	Italy	Yoga

Table 5.2.1 Demographic information of interviewees

5.2.2 Results from questions on personal details and educational background

Question 1 was optional and inquired about the age group. All interviewees are aged above 30 years old except interviewee 5 who is between 26 and 30 years old.

In question 2, "How would you describe your capacity as a musician? (e.g. teacher, soloist, chamber musician, all of the above?)" all interviewees reported that they are performers and experienced piano teachers. All interviewees, except interviewee 1, reported to be chamber musicians, while interviewees 2, 3 4 and 5 described themselves as soloists.

Interviewee	Capacity as musician
1	Performer, teacher
2	Performer, teacher, chamber musician, soloist
3	Performer, teacher, chamber musician, soloist
4	Performer, teacher, chamber musician, soloist
5	Performer, teacher, chamber musician, soloist
6	Performer, teacher, chamber musician

Table 5.2.2 Capacities of interviewees as musicians

In question 3 “What are your educational qualifications/experience in music?” all interviewees reported to having first degrees in music and four out of six interviewees also have advanced piano diplomas or the equivalent.

Interviewee	**Piano Degree/Qualification**
1	BMus(Hons), Grade 8 (distinction)
2	GRSM(Hons), LRAM, ABSM, DipRAM, PGCE, certZKPIM(Hung)
3	Solo Diploma (National Conservatory) BMus(LCM), MMA (City)
4	BA Music (Piano)
5	BMus(Piano Performance), MMus(Piano Pedagogy)
6	Diploma di Pianoforte (Napoli), DipRCM, ARAM, Dip Vienna Konservatorium (Chamber Music)

Table 5.2.3 Piano qualifications held by interviewees

In question 4 “How many years of teaching experience do you have in teaching the piano?” all interviewees claimed to have been teaching for 16 years or more except interviewee 5 who has six years of piano teaching experience. Half of the interviewees have 22 years or more experience in teaching the piano.

Interviewee	**Years of piano teaching experience**
1	16
2	28
3	22
4	18
5	6
6	25

Table 5.2.4 Teaching experience of interviewees

Question 6 inquired into the educational settings in which the interviewees teach. These are: private teaching, schools, specialist music schools, music high schools, conservatoires and universities.

Interviewee	**Educational Setting**
1	Private teaching and school
2	Specialist music schools and conservatoires
3	Private teaching and conservatoire
4	Private teaching and school
5	Community school, private, university
6	Conservatoire and music schools

Table 5.2.5 Educational settings in which interviewees teach the piano

5.2.3 Results from questions on personal experience in somatic education

Regarding their somatic experience, the interviewees replied in two relevant questions: one question on the level at which they have mastered the somatic method of their expertise and one question about any additional experience they may have in other somatic methods. Taking into consideration the versatility of teacher training programmes in methods of somatic education the questions were phrased in a way that would allow for all kinds of training and instructor capacities. In question 6 "How would you describe your capacity as Alexander Technique/Yoga/Pilates expert including the time you have been exposed to the Alexander Technique/Yoga/Pilates? (e.g. student, trainee, teacher, trainer?)" only half of the interviewees used the word 'teacher', while interviewees 2 and 5 did not report years of teaching experience. In question 7 "What is your experience or training in somatic education in general (your method of expertise or maybe classes in other methods such as Alexander Technique, Yoga, the Pilates Method, Feldenkrais, Tai Chi etc)?" all of the interviewees reported experience in at least one somatic method other than their somatic method of expertise.

Interviewee	Somatic Method	Somatic Experience/ Qualification	Years of teaching experience	Experience of other somatic methods
1	Alexander Technique	Teacher (ITM)	6	Yoga, Pilates, Tai Chi
2	Alexander Technique	ITM Teacher trainee (2 years of training)	N.A.	Yoga, Pilates, Tai Chi
3	The Pilates Method	Qualified	6	Yoga, Tensegrity, Modern Dance
4	The Pilates Method	Self taught	10	Tai Chi, Yoga
5	Yoga	200 hours Certification	N.A.	Alexander Technique
6	Yoga	Teacher (Satyananda) and trainer	15	Alexander Technique, Girokinesis

Table 5.2.6 Somatic experience of interviewees

5.2.4 Results from questions on the evaluation of somatic education methods

Question 8 "How did you encounter the Alexander Technique/ the Pilates Method/ Yoga (e.g. any particular reason or by chance)?" aims at discovering whether the personal experience of each interviewee in their somatic method of expertise commenced in relation to piano playing or not. All interviewees, except interviewee 4, encountered their chosen somatic method as a result of piano-related problems. Four interviewees related their choice of somatic method to musculoskeletal problems and two interviewees related their choice of somatic method to performance anxiety.

Interviewee	Reason for adopting somatic method
1	Repetitive strain injury (RSI)
2	Pain in right arm, repetitive strain injury, paralysis
3	Back pain while practising the piano
4	Not related to piano
5	Performance anxiety, physical problems associated with performance
6	Performance anxiety

Table 5.2.7 Reason that interviewees adopted a somatic method

Questions 9 "Do you feel the Alexander Technique / Pilates Method / Yoga helps you holistically in your well-being?" and 10 "In what issues does it help you?" were designed to investigate the first-person perspective as understood and experienced by each interviewee. Question 9 required a categorical response ('yes' or 'no') while question 10 aimed at an elaboration in the case of a positive answer in question 9. All interviewees replied positively elaborating both in their answers to question 9 and question 10. The general evaluation of their respective somatic method with regards to the holistic, beneficial nature was expressed with positive enthusiasm by all six interviewees.

Interviewee	General benefits of somatic methods
1	Mental health, happiness, injury avoidance
2	Holistic effect on well being and health, better attitude to life, physical benefits
3	Endurance, strength, coordination, concentration, happiness
4	EVERYTHING – physical, mental, spiritual
5	Happiness, success, endurance, strength, mental health
6	Endurance, strength, coordination, control, concentration, mental health, happiness, focus on the reality of the now

Table 5.2.8 Interviewees' perceived general benefits of their chosen somatic method

Questions 11 “Do you feel that your knowledge in the Alexander Technique / Pilates Method / Yoga helps you as a pianist?” and 12 “In what pianistic issues does it help you? (e.g. interpretation, endurance, strength, coordination, control, technique?)” were designed to investigate the impact of somatic education on piano performance from a first-person perspective of experts in both fields. Question 11 required a categorical response (‘yes’ or ‘no’) while question 12 aimed at an elaboration in the case of a positive answer in question 11. All interviewees replied positively and elaborated in their answers to both questions 11 and 12. They all referred to various pianistic aspects that require separate description.

Interviewee 1 (Alexander Technique) reported better speed at the piano and faster learning speed with less time consumed for practice as a result of her chosen somatic method. This latter advantage was highlighted as important for pianists prone to injuries. She also reported help in technique as a result of her chosen somatic method.

Interviewee 2 (Alexander Technique) reported reduced tension at the piano, playing without pain, with greater ease and fluency, natural and fluid technique, experiencing a new sense of stamina and endurance in piano performance, better sound quality, better coordination and, as a result, better interpretation.

Interviewee 3 (Pilates Method) reported a feeling of support at the centre which allows other pianistic faculties to happen easily. Breathing as practised in the Pilates Method is claimed by her to help with phrasing. She also reported feeling confident about her body, a sense of full control of movements, expression and stage comportment.

Interviewee 4 (Pilates Method) reported that the synchronisation of movement with tempo required in her chosen somatic method “reinforces the concentration and mathematical precision required in music”.

Interviewee 5 (Yoga) reported the benefits of her chosen somatic method in relation to pursuing a career in music such as courage and strength to pursue “alternative paths to practising and pursue different performance practices”. She also reported that her

chosen somatic method helps with coordination, calmness, mental clarity and detachment from fear in piano performance.

Interviewee 6 (Yoga) reported that his chosen somatic method helped him earn a living playing the piano. He also reported that, through Yoga, piano performance becomes a "peaceful routine that takes me back to my own centre" and a "moving meditation". Other benefits reported were resolution of stage fright, memorisation problems and technical difficulties.

Questions 13 "Does the Alexander Technique / Pilates Method / Yoga help your teaching in piano lessons?" and 14 "If so, how do you feel it helps your teaching?" were designed to investigate the impact of somatic education on piano teaching from the perspective of the teacher rather than evaluated by the student as was the case in the questionnaires. Question 13 required a categorical response ('yes' or 'no') while question 14 required an elaboration of any positive answers to question 13. All interviewees replied positively in question 13 and elaborated their answers both in question 13 and 14.

Interviewee 1 reported that the Alexander Technique helps her learn an alternative way of teaching the piano. She reported being able to help her piano students "avoid potential injuries and harmful ways of playing".

Interviewee 2 reported that the Alexander Technique helps her identify problems of tension in her students and prevent them as well as eliminate them. She also reported that she feels able to help her students in their somatic understanding within themselves and in relation to the piano. As a result she reported that her teaching process as guided through the Alexander Technique has a direct impact on the piano performance of her students with the added benefits of "greater sense of ease and fluency and happiness in the pupil".

Interviewee 3 reported that the Pilates Method helps her teaching by never feeling tired while teaching. The Pilates Method is also reported to have helped through the importance of repeating a passage only ten times and the importance of not hurrying.

Interviewee 4 reported that the Pilates Method has helped with "systematic and deliberate approaches to time and space" in lessons to students of varying ages. She also reported that the consistencies taught in the Pilates Method have helped in the teaching of piano to autistic children.

Interviewee 5 reported that Yoga helped her develop "a very strong philosophy on technique and application of yoga principles to practising". She also reports that Yoga has helped her "adapt for all students based on learning strengths and weaknesses".

Interviewee 6 reported that Yoga helps him communicate the notion of patience to students. He reports that the virtues of Yoga unfold organically through the pursuit of music during the piano lessons. The exploration of music through these principles of Yoga happens with "no judgment and no expectation".

In the responses to questions 13 and 14 an important fact is observable: each interviewee reported being helped by their adopted somatic methods in their piano teaching through the idiosyncratic benefits of each respective method. This suggests that in piano lessons aided by the Alexander Technique emphasis is laid on thinking and on general and specific use of the self, in piano lessons aided by the Pilates Method emphasis is laid on stamina and control and in piano lessons aided by Yoga emphasis is laid on psychological and spiritual factors of piano playing. This may be an indication of the characteristics of each somatic method and their relation to piano teaching. It can also be interpreted in terms of the lack of a holistic practice and utilisation even through the adoption of one somatic method.

Questions 15, 16 and 17 were designed to identify whether students of the interviewees pursue a somatic method in the educational setting that the interviewees teach, in order for them to evaluate the results of somatic education through regular classes to their students. Interviewees 1, 3, 4, 5 and 6 answered negatively. Interviewee 2 reported that her students have the option of taking lessons in the Alexander Technique within their music school curriculum and elaborated on the many benefits that can result from receiving regular lessons.

In question 18 “Do you include Alexander Technique / Pilates Method / Yoga related advice in your piano lessons?” five interviewees answered positively. Interviewee 4 did not provide an answer.

Interviewee	Include Somatic Advice in piano lessons
1	Yes
2	Yes
3	Yes
4	No response
5	Yes
6	Yes

Table 5.2.9 Inclusion of somatic method advice in piano lessons

Question 19, “How would you envisage the application of the Alexander Technique / Pilates Method / Yoga in a piano curriculum?” aimed to evaluate the viability of implementation of somatic education into piano performance as seen by experts in both fields.

Interviewee 1 reported that although she includes information related to the Alexander Technique in her teaching she envisages the Alexander Technique being taught separately from the piano lesson at beginner’s level. In advanced pianistic levels she considers the Alexander Technique to be beneficial in piano playing as part of specially organised workshops.

Interviewee 2 reported that she would envisage the Alexander Technique being taught at the same time with the piano lesson as well as during practice sessions and, when taught by a separate teacher then this would be ideally done in collaboration with the piano teacher.

Interviewee 3 reported that lessons in the Pilates Method should be incorporated in the schedule of a piano student, three times a week, while students should “do a small Pilates workout every day and between practice hours”.

Interviewee 4 reported that she would envisage the Pilates Method incorporated progressively in a "curriculum based on body control, breathing, tempo and expression".

Interviewee 5 reported that she would lay a "strong emphasis on learning the philosophy of yoga and reading yoga texts so that the student may develop a more holistic mental approach to music making".

Interviewee 6 reported that beginners would receive information more easily within the piano lesson from a qualified Yoga teacher who is also a piano teacher while at advanced levels he sees Yoga being more beneficial if practised individually on a daily basis and taught in a class format three times a week.

In general, interviewees 1, 3, 4, 5 and 6 feel that their somatic method of expertise should be taught separately from the piano lesson, while only interviewee 2 feels that her somatic method of expertise should be taught as part of the piano lesson.

Question 20 "At what stage of their piano study do you feel students should be exposed to a somatic method (e.g. beginning, pre-Conservatoire, Conservatoire, teacher training, later stage, all of the above)?" interviewees gave varying answers.

Interviewee	**Stage of piano study in which students should be exposed to somatic education**
1	Before starting or at the beginning before issues arise
2	Earliest stages of piano playing or as needed
3	At a very early age
4	At any stage
5	Pre-conservatoire
6	From the very beginning

Table 5.2.10 Stage of piano study in which students should be exposed to somatic education

In general interviewees agreed in their majority that piano students should be exposed to a somatic method at early stages of learning the piano.

5.2.5 Summary of views on the impact of somatic education on piano performance

Six pianists/piano teachers who are also specialized in a somatic method (two in the Alexander Technique, two in the Pilates Method and two in Yoga) were interviewed through a semi-structured e-mail interview. The educational level of these teachers is high, all of them possessing at least one degree in piano performance while the majority (4/6) possess two or more qualifications. Their experiential level in teaching the piano is high; the majority (5/6) of the interviewees have 16 years or more teaching experience, while half of them (3/6) have 22 years or more teaching experience; they all teach the piano in at least two educational settings. Their somatic expertise is also generally high: all of them have extended experience in one somatic method; four are certified instructors, one is a trainee and one is self taught; all of them have additional experience in at least one other somatic method while four of them have additional experience in three other somatic methods. The majority (5/6) of interviewees sought a solution in somatic education for piano-related problems, which renders this an especially appropriate group in assessing the impact of somatic education on piano performance through personal experience. These characteristics have rendered the interviewees ideal for the purposes of triangulation. An important advantage in considering the answers of these particular interviewees was that they were able to express views on the experience of movement both from a third-person perspective, the view of a teacher about the progress of their student during the lesson, and from a first-person perspective, the view of a teacher of how their student experiences the lesson (what Hanna called the experience of the self from within). This latter ability adds substantially to the interviewees' judgment heightening perceptibility, sensitivity and understanding of the somatic processes that take place during a piano lesson.

All of the interviewees agreed that their chosen somatic method helps in all aspects of their general well-being. All of the interviewees agreed that their chosen somatic method helps in several aspects of their piano playing and they all agreed that their somatic method of expertise helps in their capacity as piano teachers. Only one out of

six teachers has students who receive lessons in somatic education in their educational setting, while the majority (5/6) of teachers use somatic advice during their piano teaching. The majority (5/6) of the teachers agreed that lessons in somatic education should be taught independently from the piano lesson, while one teacher believes it should be taught as part of the piano lesson. In their majority (5/6) the interviewees agreed that piano students should be exposed to somatic education from an early learning stage.

5.2.6 Conclusions

The views of six pianists/piano teachers who are also somatic experts reveal that there is generally a common consensus that somatic education has a positive impact on piano performance. In fact, the positive effects have been reported both on a general (movement, wellbeing) and a specific (pianistic) level. However, there are idiosyncrasies and specificities in the views of the interviewees, especially with regards to the nature of the benefits of their respective somatic methods to aspects of piano performance. This may be an indication for the need for detailed research in the implementation of a tailor-made somatic curriculum in piano performance evaluated through case-study or action research methodology, which will focus on the different ways in which each individual somatic method may contribute to specific aspects of piano playing. Another interesting finding was that the only teacher who has direct experience of teaching piano students who receive lessons in somatic education as part of their curriculum is the one who also argues that somatic education should be integrated within the piano lesson. The remaining five do not share this view. This creates an important unanswered question on the co-existence of the two fields: Is somatic education more beneficial to learners of piano when implemented a) regularly and in parallel to the piano lessons but as a separate discipline, or, b) as an integral part of the teaching of piano, in other words as a structural basis of movement for piano technique and interpretation? This question offers fertile ground for further research within the field of piano pedagogy and requires research at both a micro and macro level of education.

The next chapter will offer a summary of the thesis, consider the findings of this study, draw conclusions, discuss limitations and suggest possible avenues for future research.

Chapter 6

Conclusions

This chapter takes a final look into the processes that were followed in the present study, evaluates the outcomes as well as the limitations of the research methods, states any contributions made through the designing and elaboration of the study and suggests any future directions that will be constructive in the fields of somatic education and piano performance.

6.1 Personal investigations

This research project aimed to examine the impact of somatic education on piano performance. The starting point of the study was the reflective account of my personal journey, which gave me the opportunity to act as an observer in a process in which I was also the main participant. This account was used as both a research tool and an example of the possible steps taken for resolution of pianistic issues. The initial driving force for the development of events described in Chapter 1 was to resolve my own piano-related problems and their consequent impact on my general health. In the process of finding a cure, I discovered that there is a plethora of mind-body disciplines, each of which contributed differently to the improvement of my general and pianistic condition. I also discovered a multitude of problem-free piano methods, the parallel application of which led to my better understanding of the different ways in which piano performance can be approached. The various stages of experimenting with piano methods and methods of somatic education allowed me to experience the gradual and cumulative effects of each new set of knowledge and skills. However, due to the nature of this quest, which was characterised by a parallel angst and distress to resolve my problem, I was not able to experience distinctly and objectively the effects of each method on my piano playing. This may also be due to the fact that I was the researcher and the object of research at the same time. A more objective perspective may be required in order to further examine the various combinations of the educational tools offered in this new field. Another limitation that I came to realise in hindsight was that my own journey began at a time when the internet was merely beginning to function as a research tool and as a result the

information pertaining to performing arts medicine was limited and not easily accessible. This was clearly one of the reasons why my understanding of the problem at hand was not holistic from the very beginning and it took a long time to complete a full circle of enquiry and discovery. At the same time, the multitude of knowledge to which I was exposed in the long term through the search for new ways of piano playing and the training and practice of three somatic methods may have contributed to the attainment of a level of understanding that is difficult to reproduce systematically and within the span of fewer years, my personal journey of investigations having lasted fourteen years. Nonetheless, the success that my students have enjoyed individually and collectively is proof of the possibility of a succinct and compact delivery of the appropriate knowledge.

6.2 Somatic Education and piano performance

The hypothesis that somatic education may possibly contribute to piano performance led to a closer look into the area of somatics and its beginnings as a unique field which bridges the ancient debate of the unity and/or duality of body and mind. Being the epitome of holistic mind-body approaches, somatics encompasses a plethora of modalities from ancient to modern times. Three methods of somatic education were examined closely as to their relation and contribution to the performing arts and piano performance in particular. A review of the literature on the Pilates Method, Yoga and the Alexander Technique answered the first research question "What is already known in the literature of somatic education regarding problems of performing artists and pianists in particular?"

6.2.1 The Pilates Method and piano performance

The positive impact of the Pilates Method in the fields of medicine and the performing arts has been studied and recorded empirically and experientially; alas, these studies are limited and very recent. Its exponential popularity is an indicator of the potential of the Pilates Method for future research into its application to performing arts and piano performance in particular. The origins of the Pilates Method as well as the relatively limited writings by the founder, Joseph Pilates, revealed his opposition to dualistic considerations of the human being and suggested

an affinity of the method to the general concept of somatics. Interestingly, the reports of two piano teachers trained in the Pilates Method (see Chapter 5) confirmed the somatic nature of the method as applied to piano performance. Although most modern practices of the Pilates Method promote its affinity with movement modalities rather than somatic education, the participants of the workshops reported in their majority on the positive effects of the Pilates Method to their general wellbeing and to their somatic understanding of piano performance. These facts answer the research question on whether the Pilates Method can be considered a method of somatic education, with one reservation: the way in which the method is practised and taught varies significantly from school to school and from teacher to teacher, thus rendering research towards solid conclusions difficult if not impossible. It must be emphasised here that the present thesis is the first doctoral project to consider the Pilates Method amongst other somatic methods in a musical context and also the first to consider it as a contributing culture to problem-free piano playing. It is, therefore, hoped that this will serve as a stimulus for future research into specialised applications of the method for pianists both on an educational and laboratory level.

6.2.2 Yoga and piano performance

The empirical evidence of the impact of Yoga was examined in order to confirm that it is an established method of somatic education. The experiential and empirical evidence of the impact of Yoga on performers was then seen in the literature that focused on musicians and pianists in particular. However, the positive effects on piano performance through the practice of Yoga, although evident in most of the available literature, have not been so far thoroughly studied and researched. The only two documents written by Yoga experts who are also pianists demonstrate diametrically varying pedagogical approaches. While one author focuses on the philosophical considerations of Yoga and its positive impact on musical expression, the other author emphasises the physical aspects of Yoga and uses it as a choreographic inspiration for the implementation of what are seen as new elements of piano technique. The latter posed a dilemma as to whether the examination of the particular document (Piano-*Yoga*®, 2009) should be included in the section on Yoga experts who are also pianists (Chapter 2.2) or in the examination of somatic consideration in piano methods (Chapter 3). My decision to include it in Chapter 2

was based on the premise that this is an attempt to apply specific principles of Yoga to one aspect of piano playing and as such is not a complete piano method. In retrospect, I realise that my reservation may have been due to my opposing views as to the effectiveness and safety (with regards to the health hazards) of this particular approach. Regardless of my inability to be objective in the matter of the contents of this document, this attempt may well be an example of the very first step of devising a whole system of piano playing based on somatic principles. In general, the limited literature in the field of Yoga for pianists, although original and inspiring, is not comprehensive in relation to all the educational components that lead to effective piano performance. This limitation is a possible motivation for future research into the implementation of principles of Yoga in the multiple aspects of piano performance.

6.2.3 The Alexander Technique and piano performance

The theoretical concepts of the Alexander Technique as well as its impact were investigated in the application of all forms of movement and positive effects were reported both in the fields of medicine and performing arts. With specific reference to piano performance, there is empirical and theoretical evidence of the positive impact of the Alexander Technique. This technique has been used successfully as a tool to enhance the general performance of pianists both on a general coordination level and a pianistic level. However, there has not been an attempt at systematic implementation of its principles within the various stages of a progressive piano curriculum for the formation of a comprehensive and holistic piano method. One important reason why this may not be applicable to specific aspects of piano performance is that the very nature of the Alexander Technique does not encourage specific instruction; on the contrary, it develops an understanding of the general function of the self. This conflict has also been verified in the interviews, which revealed two opposing views in the nature of implementing the Alexander Technique: as an integral part of the piano lesson or as a parallel activity to be attended outside the piano lesson. This limitation could be examined in further research, both through longitudinal and case-specific studies, which will also take into consideration the different traditions of teaching within the profession of the Alexander Technique.

6.3 Somatic considerations in existing piano methods

One of the limitations that I came across as I embarked on this research was the lack of a synthesized and systematic approach that will educate pianistically as well as holistically. This led to the research question "What is already known in the literature of piano performance regarding a holistic consideration of pianists?" which was answered in Chapter 3. The review of the relative literature revealed that Couperin was the first to consider the keyboard player holistically and set an example for the ideal comprehensive piano method by including advice both on the attitude in performance and the manner of execution. Following a long tradition of finger isolation which lasted more than a century, Breithaupt and Matthay revisited somatic possibilities in the art of piano playing and introduced groundbreaking concepts of mind and body in connection to piano performance in the beginning of the 19th century. Matthay may well be considered as the founder of somatically informed modern piano performance. He opened the way to the work of many pioneering piano pedagogues of the twentieth century who considered piano instruction holistically. Unfortunately, Matthay's contribution to a somatic understanding of piano performance is not often acknowledged. An example of this revealed itself in my own case, when, only towards the end of this research project, I discovered that I belong to the fourth generation of piano lineage formed by students of Matthay. My expertise in movement allows me to detect, in hindsight, some elements of the important discoveries of Matthay in the instruction I received in my early studies. Nevertheless, these were never taught to me consciously or with specific attributes to the somatic schooling of this pioneering pedagogue. This fact reinforced my conviction of the necessity for this chapter with an aim to detect the somatic considerations existent in modern piano methods. Indeed a plethora of somatic quotations, suggestions and direct teachings were found. However, piano performance is not free of complications caused by psycho-physical obstacles, hazardous instruction textbooks and audiovisual materials. I attribute this to the fact that somatic considerations are mainly found as general directions or as parallel advice in aid of problem-free piano performance and are not specifically linked to the components of piano playing. Although I have personally devised a combinational approach in my own teachings with positive feedback and results, the literature review also revealed that, to date, there does not exist a comprehensive and structured

educational system which incorporates principles of somatic education in piano performance systematically and interlinked with the progression of piano performance from beginners' to advanced levels. Given the many positive comments and recommendations of methods of somatic education by modern piano pedagogues, I believe that the next stage of research into somatic education as related to piano performance is one where somatic advice is implemented within each stage of learning and for each component of piano performance. This could be materialised as a research-based comprehensive piano curriculum or an experimental initiative that stems from the work of piano pedagogues such as series of piano tutors or piano methods by established boards such as LCM, TCL and ABRSM.

6.4 Data analysis

6.4.1 Questionnaires

While Chapter 1 was based on a subjective evaluation and conclusions drawn from Chapters 2 and 3 were based on the existing literature, an objective and collective evaluation was aimed at through the distribution of 385 questionnaires. The questionnaires touched on issues of piano playing, methods of somatic education, workshop delivery and implementation of somatic education in piano performance and yielded positive results in their majority. One limitation of this research tool, which contrasts it with my reflective account and the literature review, was the fact that the exposure of participants to the way I view somatic education and taught it during the workshops was very brief: the workshops lasted one day, usually from 9am to 9pm. Therefore, the long-term experiences that participants had before they attended the workshops were more likely to be different in nature and more ingrained than the knowledge and experiences I provided them during the workshops. These previous experiences undoubtedly influenced their answers accordingly. This fact renders their evaluation less comparable to my own personal findings or the findings examined in Chapter 2. It also opens up more specific possibilities for future research, where theoretical and empirical results may be cross-referenced with longitudinal studies to assure more succinct results which will stem from the same variables.

In other respects, the participants were ideal for the introduction to and evaluation of new somatic principles as most of them had encountered physical problems related to piano performance and all of them were aware of the existence of at least one somatic method. Following the workshop, most participants reported that they would include a somatic method in their daily routine. Interestingly, almost half of them would choose the Alexander Technique, one third of the participants would choose Yoga while one fifth would choose the Pilates Method. This was attributed to the fact that the Alexander Technique was seen as more readily applicable to specific issues of piano performance, a fact that was reported by those participants who receive regular lessons in the Alexander Technique and was also demonstrated more apparently during the workshops. However, in retrospect, I also considered the possibility of having delivered the material in such a manner that may have encouraged participants to view somatic methods through my own biased somatic lens. In addition, the specific somatic method preferred and pursued by each individual pianist was also found to be dependent on the availability of the somatic method and on the idiosyncrasy of each pianist, as well as the nature of their particular needs and problems. Although the reasons for choosing a specific method were not examined in the present study, in hindsight, I strongly believe that these should be examined in further research. More adequately, a new parameter that could be implemented is the suitability of each individual somatic method to the specificities of piano performance and the resulting problems reported by pianists.

There was more than one question that was directly linked to the main research question "Does somatic education have a positive impact on piano performance"; they were all answered positively by the majority of the participants. The research question "To what extent are pianists exposed to somatic education?" revealed that almost one third of the participants attend regular lessons in a method of somatic education. From my personal perspective this is a substantial advancement in the availability of information as compared to the starting point of my re-education and is indicative of the hope for constructive changes in the consideration of piano performance. An indicator that this is a new era where musicians' attitudes and views are broadened is that all of the participants who receive regular instruction in a somatic method reported feeling that somatic education helps in issues of general health, stamina, strength, neuromuscular coordination and musculoskeletal problems.

These reports coincide with the studies examined in Chapter 2, where the benefits of each somatic method were recorded in relation to physical problems.

More relevant to piano performance were the reports of participants who receive regular lessons in a somatic method. These reports related to the research question "Which components of piano performance can benefit from somatic education?" and all participants reported feeling that somatic education helps with posture at the piano, pianistic stamina, strength and neuromuscular coordination at the piano and with specific aspects of piano technique. This question was aiming at recording the statistical results of pianists' existing experiences and was, in this respect, not dependant on the material taught during the workshops, although, admittedly their opinions could have been reinforced throughout the workshop. Thus, the answers, although positive, reflected the ways in which pianists had experienced somatic education outside of the theoretical context which I created (based on the material analysed in Chapter 4). In order to have a response which was more directly dependant on the material taught during the workshops, this question was also posed to the whole sample, i.e. all of the participants regardless of whether they were receiving regular instruction in a somatic method or not. The majority of the participants felt that somatic education can enhance piano practice and teaching and, to a lesser extent, interpretation. Also, the majority of participants felt that somatic education can enhance piano technique. Finally, half of the participants felt that it can help with stage fright and to a lesser extent expression, performance, memorisation and aural perception. This clearly suggests that piano performance *per se* is also going through a period of constructive changes. In addition, these results are of importance as regards the impact of a workshop as a means for delivery of theoretical and experiential knowledge. Although pianistic skills need a long-term exposure to in order to be acquired, be it somatic or purely pianistic, the exposure to the existence of this new paradigm as well as the practical experimentation that takes place during a workshop suffices for participants to shape an opinion on the effectiveness or otherwise of somatic education on piano performance. In fact, in evaluating the workshops of Somatics for Pianists, the majority of participants found the workshop very helpful, would like to see a next series of the workshop, were likely to follow a somatic method and felt that somatic education could help with their pianistic issues. They also benefited from the conceptual framework of the workshop, a fact that was

deduced by answering correctly to brief questions of a somatic nature. This was an additional indication of the fact that a series of workshops could be a potential means of conveying somatic information to pianists: this partly answers another research question: "What are the effective means of introducing somatic education to pianists?" This research question arose from my aim to give an educational resonance to this thesis not only as a document that presents comprehensive views on the development of a new field but also as a springboard for further research into holistic piano pedagogy.

The main limitation that presented itself during the delivery of the workshops was the financial limitation, which did not allow for workshop delivery at a national level. This study was pursued through a personal initiative and as such was self-funded and could not be implemented as part of the national music education system. I, therefore, had to limit myself to a small geographical area of central-northern Greece and to hypothesise that my sample was sufficient to act as indicative of the general population behaviour. A more ideal circumstance could be one where this study could be conducted as part of a national educational project aiding unproblematic piano instruction.

The introduction of somatic education in piano curricula will naturally go through many stages of scrutiny and experimentation before it is established. One important step is with the evaluation by people directly influenced by this implementation. In the research question "At which level of their education are pianists more open to receiving and accepting somatic information?" the majority of participants replied that somatic education should mainly be part of piano teacher training, university piano lessons and conservatoire piano lessons. Taking into consideration the variety in the age groups of the participants, this is an interesting outcome as it does not include early years of learning. I would personally encourage indirect engagement in somatic understanding at early stages of piano lessons. This view was also supported by six interviewees at a later stage of the research. The general view that somatic education is more effective in the frame of adult education is due to a misunderstanding: Somatic education is still viewed as a therapeutic and/or rehabilitative tool. Indeed, this is how somatics occurred: through people's need to resolve their existing psycho-physical problems from a first-person perspective (see Chapter 2.1). However,

somatic education offers a vast potential in the improvement of the learning processes of performing arts and, as a result, piano performance. This is a different avenue of exploration that goes beyond the scope of the present thesis, nevertheless, it is an issue that is indirectly linked to the constructive establishment of early learning strategies and has immense repercussions for the wellbeing of future generations of musicians.

6.4.2 Interviews

Having established the positive effects of somatic education on piano performance on both a personal (subjective) and collective (objective) level and answered the relevant research questions, I attempted to triangulate the results by adding the views of pianists who are qualified and experienced both as piano teachers and as somatic instructors. The reason for this was that I wished to gain feedback from people who had similar personal experiences to mine (i.e. who had a first-person somatic perspective of the experience of somatics as described in Chapter 1) in the hope that the inclusion of their perspectives would justify the hypotheses that I had made throughout my own journey. One characteristic that was prominent in this group of people was their inquiring mind. In a similar fashion to founders of somatic systems such as F.M. Alexander, Joseph Pilates and B.K.S Iyengar, the six colleagues that were interviewed demonstrated a desire for ongoing experimentation and learning. This was a crucial and rewarding point in the research as it proved that my hypotheses were not unsubstantiated and that I was not alone in the quest for a broader and more holistic consideration of piano performance. Moreover, due to their dual capacities, the six teachers could evaluate their pianistic and somatic progress through a first-person perspective but could also speak about their students' experiences through a third-person somatic perspective (see Chapter 2.1). This rendered their views very valuable and, although I could only locate six teachers, their feedback was surprisingly homogenous.

At this stage it is worth mentioning that, given the variety in nationalities of the six interviewees (UK, Greece, US, Italy) and the international, heterogeneous nature of their studies (conservatoires and music universities in the UK, the US, Austria, Greece, Hungary and Italy), their overall agreement on the pivotal issues that

concerned the present thesis attached an importance to the agreed views. The email interviews thus gave me an opportunity to gain global feedback in contrast with the narrowed local feedback that I gained through the workshops. The six pianists/somatic educators all found somatic education helpful in their general well-being and in several aspects of piano performance. They also all reported that their somatic method of expertise helps in their capacity as piano teachers.

There were varying idiosyncrasies and specificities in the views of the interviewees especially with regards to the nature of the benefits of their respective somatic methods for aspects of piano performance. This was expected due to the different nature of the three somatic methods. A closer examination of the impact of each individual somatic method on piano performance revealed that specific concepts and practices taught in one somatic method contribute to the improvement of specific components of piano performance. For example, both interviewees who specialise in Yoga reported experiencing benefits of a psychological nature with relation to piano performance, a fact which was also reported by all musicians and Yoga authors in Chapter 2.3. As a result of my own training in three different somatic methods I can detect specific correlations between each method individually and piano performance. However, as I have stressed before, due to my gradual and cumulative exposure to three methods of somatic education I cannot be objective in my judgment. This hypothesis opens up many research possibilities, which will benefit from case study as well as longitudinal methodologies.

6.5 Research questions that occur from the findings and limitations of the present research

It is important to mention here that the methods of somatic education examined in the present study are not practised in a similar manner and under similar principles worldwide. To be more specific, there are four distinct teaching associations with different codes of conduct in the Alexander Technique and many sub-associations which stem out of these associations. Yoga is an ancient form of mind-body practices which has seen innumerable branches, alliances, guilds and teaching associations, all practising different kinds of Yoga in many different kinds of traditions. The Pilates Method is also practised according to the teaching focus or according to the views of

the ‘master teacher’ that has established a certain teaching tradition; oftentimes teachers of the Pilates Method have not gone through a formal training. This discrepancy has produced limitations as to the uniformity of concepts, ideas and practical applications of the three somatic methods examined in this thesis. Although the literature review aimed at linking the three somatic methods to their most trustworthy and scholarly historical and theoretical background, there exists an inevitable plethora of variety in quality, authenticity, certification and practice of these somatic methods. The hypothesis made at the inception of the present study was that the teachers of any practised somatic method are acting with the intention to convey the essence of their method of expertise to their students’ maximum benefit as is the case with piano pedagogy and any other discipline which is taught under no formal set curriculum. This limitation may have repercussions in the comparison of two or more subjects within the same study due to the fact that the main variable (for example Yoga for pianists) cannot be measured as one and the same. At the same time, this limitation can serve as research material for the closer examination of the practice of a specific branch of a somatic method as to its impact on piano performance, qualitatively or/and quantitatively.

The ongoing existence of piano-related musculoskeletal disorders (PRMDs) was confirmed in the workshop questionnaires, where the majority of pianists reported having experienced these problems. The majority of these pianists also reported being interested in pursuing a somatic method and attending experiential workshops that will prevent piano-related problems, inform and enhance their piano performing skills. This confirms that we are in a significant transition period of piano pedagogy and performance (an assumption that was made at the very beginning of this study). The area of piano pedagogy is gradually and progressively developing towards a problem-free ethos and the present findings can help in the development of holistic considerations of pedagogic curricula. Somatic education is nearing a century of being formally applied in the performing arts and research is more prominent as related to the impact of somatic education on dance and the theatre. Some of the positive outcomes of the present study may help as motivation for further exploration into the potentialities of somatic education as implemented in piano performance in order to support the exponential development of existing scientific laboratory research into piano performance and add the first-person somatic perspective into the

improvement of the many components of piano performance that cannot be detected through a purely scientific approach.

The limitations and retrospective thoughts that the present study revealed may be helpful indicators of the possible directions that this new field could trace. As a result, the following questions were raised for future research:

1. Which somatic methods are more appropriate for the creation of a problem-free piano curriculum and why?
2. Is the impact of somatic education more effective when taught as integral part of the piano lesson and the cognitive materials therein, or is it more effective when taught in parallel to the piano lesson as a distinct subject?
3. At which age and pianistic level are young students able to evaluate their progress and thus produce trustworthy feedback for future studies?
4. Can there be a cross-disciplinary evaluation of the impact of somatic education on piano performance from the fields of biomechanics, neurology and physiology for more accurate and quantitative results?
5. To which somatic and pianistic extent should a researcher be qualified in order to be able to design and evaluate a study in somatic education and piano performance?
6. Would a longitudinal study in pianistic progress before, during and after the implementation of somatic education provide different results from the present study?
7. Which specific components of piano performance can be enhanced by which selected practices of different somatic methods?

The interdisciplinary field of somatic education and piano performance has drawn from a plethora of disciplines. All the somatic pioneers possessed more than one capacity, which allowed each of them the ability to have a broader scope in the intricacies of movement and the culture of movement. In addition, the field of somatic education is constantly expanding and today there are innumerable somatic methods that have stemmed from the methods mentioned in the present thesis. It is therefore expected that future research will benefit most from a multiplicity of disciplines and methodological approaches.

6.6 Concluding thoughts

This thesis has argued that somatic education enriches the experience of piano performance on mental, physical and psychological levels by introducing the first-person perspective. A somatically informed learning process creates a theoretical and practical foundation that allows pianists to explore themselves and their actions in ways that ensure problem-free piano playing, which in turn allows for an uninterrupted artistic development. Therefore, I strongly believe that the implementation of somatic education at all stages of piano performance applied systematically and within approved piano curricula is an initiative that will prove to be constructive, both for professionals (performers and teachers) and students.

The driving force behind this research project has been my desire to contribute to the ongoing efforts to enrich the experience of piano performance. During the various stages of writing this thesis I was frequently inspired by the initiative of Yehudi Menuhin who sought an answer to his psycho-physical problems in the teachings of B.K.S. Iyengar. Since then, Menuhin established a new ethos in music performance, whereby musicians were encouraged to embrace mind-body modalities. Shortly before his death, Menuhin, gave his definition of music practice in his foreword to Madeline Bruser's *The Art of Practicing.* In the context of the present thesis, this definition applies equally and very appropriately to piano performance:

> More and more we realize that practicing is [...] a refined art that partakes of intuition, of inspiration, patience, elegance, clarity, balance, and, above all, the search for ever greater joy in movement and expression. (Bruser, 1997, p.xiii)

By following Menuhin's example, I hope that this project has offered a new scope in the area of piano performance and that it has bridged two disciplines that will help future pianists to continue searching for joy in movement and expression.

Appendix A

Chronology of investigation, recovery and re-education

Tables for visual facilitation

1ST STAGE OF INVESTIGATION				
MEDICAL TREATMENTS	ALTERNATIVE MEDICINE TREATMENTS	PIANO RE-EDUCATION	SOMATIC METHODS	YEARS OF RECOVERY
Hand specialist				1998 1st month
2 Sports therapy orthopedic MDs				1998 2nd month
3 orthopedic surgeons				1998 3rd month
4th orthopedic surgeon & Physiotherapy				1998 4th month
5th orthopedic surgeon & Physiotherapy				1998 7th month
1 rheumatologist & Physiotherapy				1999 9th month
1st neurologist & Physiotherapy				1999 9th month
2nd neurologist & Physiotherapy				1999 9th month
3rd neurologist & Physiotherapy				1999 10th month
1 pathologist & Physiotherapy				1999 11th month
Neurologist/ acupuncturist	Neurologist/ accupuncturist			1999 12th month

2ND STAGE OF INVESTIGATION				
MEDICAL TREATMENTS	ALTERNATIVE MEDICINE TREATMENTS	PIANO RE-EDUCATION	SOMATIC METHODS	YEARS OF RECOVERY
	Chinese and Japanese medicine			1999 16th month
	Chinese and Japanese medicine	Piano lessons re-education	Lessons in Tai Chi Zen meditation	2000-2001
	Chinese medicine	Piano lessons re-education	Tai Chi lessons	2001-2002

3RD STAGE OF INVESTIGATION				
MEDICAL TREATMENTS	ALTERNATIVE MEDICINE TREATMENTS	PIANO RE-EDUCATION	SOMATIC METHODS	YEARS OF RECOVERY
	Rolfing	Piano lessons re-education	Lessons in the Pilates Method	2001-2002
	Rolfing	Piano lessons re-education Piano performances	Lessons in the Pilates Method	2002-2003

4TH STAGE OF INVESTIGATION				
MEDICAL TREATMENTS	ALTERNATIVE MEDICINE TREATMENTS	PIANO RE-EDUCATION	SOMATIC METHODS	YEARS OF RECOVERY
	Shiatsu Osteopathy Accupuncture	Personal study Piano teaching and performances	Pilates Teacher Training	2003-2005

5TH STAGE OF INVESTIGATION				
MEDICAL TREATMENTS	ALTERNATIVE MEDICINE TREATMENTS	PIANO RE-EDUCATION	SOMATIC METHODS	YEARS OF RECOVERY
	Bowen technique Shiatsu Osteopathy Ayurveda	Piano teaching and performances workshops	Pilates Teaching Yoga Therapy Teacher Training Lessons in the Alexander Technique	2005 - 2007
	Chiropractic Osteopathy Craniosacral Osteopathy Shiatsu	Research at BCU Piano teaching and performances workshops	Pilates and Yoga Therapy Teaching Lessons in the Alexander Technique	2007 - 2008

6TH STAGE OF INVESTIGATION				
MEDICAL TREATMENTS	ALTERNATIVE MEDICINE TREATMENTS	PIANO RE-EDUCATION	SOMATIC METHODS	YEARS OF RECOVERY
	Chiropractic Osteopathy Craniosacral Osteopathy Shiatsu	Research at BCU piano performances workshops	Pilates and Yoga Therapy teaching ITM Alexander Technique Teacher Training	2008 - 2012

Appendix B

History and origins of Somatic Education

B.1 History of Somatics

The idea of soma as a process that contains equally body and mind was supported by Hesiod (Joly, 2000, p.2). However, progressively a new approach was developed, which favoured the distinction between mind and body, on the basis that the body can be corrupted. The conceptual dualism between mind and body was supported by Plato and Socrates, who perceived body as the prison of the soul and mind. Moreover, they both dualistically placed the body, as subject to decay, in opposition to the mind, being viewed as the concept of eternity (Aroni, 2008, pp.11-12). These beliefs of Ancient Greek philosophers influenced Descartes who developed a different type of dualism. According to Descartes, the body is nothing more than a corpse that can be studied in disciplines such as medicine or biology. The body cannot be considered as part of the intellectual or moral functioning of individuals and is unable to express feeling (e.g. anger, passion, guilt, etc.). Subjective experiences are considered worthless compared to objective and scientific truths (Aroni, 2008, p.21; De Negri, 1996, pp.24-25). The dominance of dualism in Western societies has had a number of consequences for human kind. In particular, the dichotomy between mind and body, which is related to the devaluation of the body, has resulted in fear of death and losing consciousness. A second consequence is the rejection of any subjective experience, while objective reality is promoted. Technology also tends to promote the superiority of mind over body. A fourth consequence is that bodies need to function in predictable, objective ways and any individualised approach concerning bodily needs becomes suspect. In this context, conformity to current doxa is demanded. The concept of conformity is also obvious in the perception of the "ideal body", where external pressures are placed upon individuals' bodies to become something predictable and objective, ignoring the personal experience that occurs within the bodies. Finally, the negative consequences of dualism are overt in health care systems, where health care professionals are not enquiring after the subjective experience of their patients in order to make decisions about their health and are

solely dependent upon objective findings (De Negri, 1996, pp.25-27; Matthews, 1991, p.92).

By the end of the 19th century a shift is observed in relation to the way that soma is perceived, due to developments in specific disciplines, such as psychology, cultural studies, education and medicine. Moreover, the European Gymnastik movement contributed to the development of somatics, since its main goal was to change the existing perceptions about physical activity towards an approach that gave more emphasis on the body, using specific tools such as expressive movement choreographies, sensory awareness, touch, breath and music (Batson, 2009, p.1; Johnson, 1994, p.1).

In particular, the field of Humanistic Psychology has actively challenged the idea of objective truth and has placed a focus on the personal way in which individuals are experiencing the world through their bodies (Heiden & Hersen, 1997, p.59). François Delsarte was an important pioneer who developed the Delsarte Method of Expression which has become an important component of actors' and dancers' training. Delsarte had studied music, singing, dancing and acting and felt restricted by the rigid styles of posing; thus he started to observe human behaviour in different contexts (e.g. parks, hospitals, etc.). He made thorough observations of the voice, the movements, the kinetic lines and the manner in which every part of the human body can function as an expressive instrument. Delsarte's work describes how emotions and personality can be expressed through body postures and gestures (Marsella et al., 2006, pp.81-82; Schiphorst, 2009, pp.77-78).

John Dewey was one of the first philosophers openly to reject the idea of dualism, as a dichotomy that has created many problems on educational, medical and religious levels. He showed that this dichotomy is also evident in our language since there is not one word to describe the unity between body and mind (Dewey, 1928, cited in Schwartz, 2006, pp.14-15). Following Dewey's lead, many other practitioners attempted to experiment with somatics based on different motives. Some of them were motivated by the need to find effective solutions to their personal diseases or physical injuries (e.g. Frederick Mathias Alexander or Moshe Feldenkrais), while

others had a need to enhance their expressiveness and creativity (e.g. Ida Rolf, Elsa Gindler or Charlotte Selver) (Kleesattel, 2012, p.5).

In the 20th century, Hanna is the first who uses the term "somatics" encouraging people to experience their bodies from within. In 1986, Hanna wrote a four part article entitled *What is Somatics?* in which he emphatically embraced the first-person and third-person viewpoint:

> Somatics is the field which studies the soma: namely, the body as perceived from within by first-person perception. When a human being is observed from the outside – i.e., from a third-person viewpoint – the phenomenon of a human body is perceived. But, when this same human being is observed from the first-person viewpoint of his own proprioceptive senses, a categorically different phenomenon is perceived: the human soma. [….] Somatics then is a field of study dealing with somatic phenomena: i.e. the human being as experienced by himself from the inside. (Hanna, 1986, p.4)

However, Hanna is responsible for the flourishing of the somatic field mainly at a philosophical level (Schwartz, 2006, pp. 16-17). Nowadays, with a view to improving people's lives, various somatics modalities are applied in disciplines such as psychotherapy (enabling people to get in touch with their emotional world) or dance (improving dancers' body posture) (Kleesattel, 2012, p.7). More specifically, the Association for Humanistic Psychology has established a somatics sub-field. International professional associations are also using the term somatics. Somatics is recognised as a separate field at an academic level, since master and doctoral degrees are offered by academic institutions in the USA (Johnson, 1994, p.1) and the UK.

B.2. History of the Pilates Method

Pilates was born near the city of Düsseldorf in Germany and was described as a child prone to ailments such as asthma, rickets and rheumatic fever. Pilates was determined not to allow his health conditions to be an obstacle in his everyday functioning, thus he studied and practised different types of physical activities (e.g. bodybuilding, boxing, gymnastics, yoga, Zen meditation etc) (Latey, 2001, pp.275, 276; Reyneke, 2002, pp.16-18). At this point it is necessary to clarify that Pilates initially developed the exercises for himself in order to strengthen his body and overcome his

susceptibility to diseases (Herdman and Paul, 2007, p.6; Robinson and Fisher, 1998, pp.21, 22). His active involvement with sports and exercise can be partly explained by this need to overcome his medical conditions. The fact that his father was a famous gymnast and his mother a naturopath are additional factors supporting his style of living and eagerness to find solutions within a naturalistic approach (Rouhiainen, 2010, p.60).

In 1912, in an attempt to find a better paid job Joseph Pilates moved to England, where he worked as a boxer, circus performer and self-defence trainer. During World War I, because of his nationality, he was held in internment camps in Lancaster. He encouraged his fellow internees to participate in a programme of exercises that he had developed personally and that were to be performed on a mat. This programme of exercises could be considered as the first step of developing his method. At the same time, the influenza pandemic was killing thousands of people all over England. However, no one died in this camp and Pilates attributed this fact to the participation of the internees to his programme of exercises (Latey, 2001, pp.275-277; Massey, 2009, p.5). He was later transferred to the Isle of Man, where he continued applying his programme this time aiming to assist the rehabilitation process of injured soldiers. There, he was experimenting with the use of additional equipment such as bed springs, when he realised that applying exercises with resistance had a positive impact on the quicker recovery of the soldiers (Kloubec, 2011, p.61).

After the war Pilates returned to Hamburg where he met Rudolph Laban, the originator of a method of dance notation, and he was introduced to the performing art of dance (Massey, 2009, p.5). The approaches of Laban and Pilates share two common features: (i) exercises should take the unity of body and mind into consideration, and (ii) trainers should give emphasis to the flowing movement, where flow can be described as the skill of inner control of the body and the self. In 1926, Pilates moved to the USA and set up his own studio in New York where he first taught his exercise program, by then called *Contrology*. Dancers and athletes were among the groups that embraced his training method and benefited from it in terms of gaining strength and acquiring flexibility (Latey, 2001, 275-280; Massey, 2009, pp.5-8; Ziegler, 2012). However, Pilates was very possessive about the uniqueness and individuality of his method, which resulted in the absence of a comprehensive text

about his methodology and theory as well as a very limited number of trainees to disseminate his method faithfully and originally (Latey, 2001, p.282).

B.3 History of Yoga

The review of the existing literature revealed the same problem that has been mentioned with the conceptual framework of the term Yoga, thus the absence of a unified approach related to classification of its history. Two trends can be identified concerning the division and categorisation of the history of Yoga. One supports the idea of five distinctive categories, while the other suggests three broader categories in the historical tradition of Yoga. Feuerstein (1998, pp.14-20) proposes five periods (see Table B.1) where approximately each one of them is characterised by one of the classical texts of Yoga. More specifically, Feuerstein divides the history of Yoga into the following periods:

(i) Vedic period, where the ancient scriptures, known as *Vedic Yoga*, contained archaic beliefs related to Yoga philosophy, where sacrifice and inner concentration have been the main prerequisite for joining the material with the spiritual world.

(ii) Preclassical period, a period during which two equally important texts were written: the *Upanishads* and the *Bhagavad-Gita*. These texts encourage individuals to be active, to overcome ego restrictions and to use meditation as a technique to achieve the above-mentioned goals.

(iii) Classical period; the *Yoga Sutras of Patañjali* is the text that characterises this period. Patañjali supports philosophical dualism, where each individual is made of matter and spirit. Again here the goal of Yoga is to purify the spirit.

(iv) Postclassical period, where yogis (practitioners) are starting to pay attention to the body by developing techniques to rejuvenate it. *Hatha-Yoga Pradipika* is the classical text of this period that contains the evolution of Yoga from Patañjali's beliefs to the need of preserving and strengthening the physical body.

(v) Modern Yoga: this period begins with the expanding influence of Yoga philosophy on Western societies due to the efforts of people such as Emerson, Thoreau and Vivekananda.

Period	Dates	Characteristics
Vedic / Archaic	3000 BC – 1900 BC	Union of spirit and matter through sacrifice
Preclassical	1800 BC – 200 AD	Upanishads teach the union of all things
Classical / Raja	circa 200 AD	Patañjali's Yoga Sutra teaches philosophical dualism
Postclassical	Circa 200 AD – 1893	Ultimate unification of all things; body becomes important; the creation of Hatha Yoga
Modern	1893 – present	Yoga as a body-mind-spirit discipline penetrates the West

Table B.1: Feuerstein's Historical Classification of Yoga

In relation to the three-fold classification of the history of Yoga, it is observed that the criteria for the historical division vary significantly. In particular, Bhavanani (2011, pp.2-21) divides the history of Yoga based on the existence or not of written texts, thus, he mentions three periods of Yoga tradition: (i) pre-historic period, where the transmission of the philosophy is based solely on spoken language, (ii) historic period, when the teaching of Yoga philosophy is accomplished by spoken language and written texts, and (iii) modern period, when the acquaintance with Yoga discipline does not presuppose the existence of a Guru (an absolute teacher and guide), as is mostly the case in the previous two periods, but can result from the use of different resources.

Hunt's (2010, pp.30-32) classification (see Table B.2) is based both on the classical texts and the philosophical trends or ideologies that influence each specific period. Hunt reports the following eras in the history of Yoga: (i) Classical Yoga (100 BC-500 AD): when the main textbook is the Yoga Sutras and the goal is to transcend the

Self, (ii) Hatha/Tantric Yoga (500-1300 AD): when the main written texts are Hatha Yoga Pradipika and Gheranda-Samhita, where the primary objective is to transcend the body, and (iii) Modern Yoga (1900 AD - present): Green ideology, mass participation and the acceptance of the scientific or medical model are the main characteristics of this period.

Period	Dates	Characteristic
Classical Yoga	100 BC – 500 AD	Patañjali's Yoga Sutras emphasises transcendence through meditation
Hatha Yoga	500 AD – 1300 AD	Hatha Yoga inscriptions teach physical postures and emphasise breathing techniques
Modern Yoga	1900 AD - present	Scientific and health centred scope; Yoga becomes more secular than before

Table B.2: Hunt's Historical Classification of Yoga

However, among the more concrete classifications of the history of Yoga is the one proposed by White (2011), who also suggests three phases in the evolution of Yoga discipline: (a) Indian foundation of Yoga theory, (b) Mediaeval development, and (c) Modern Yoga. White underlines the fact that Yoga philosophy has suffered many changes through the years, thus there are not many similarities between Yoga as it has been described by classical texts, such as the *Yoga Sutras* or *Bhagavad Gita* and as it is being practised now.

(A) Indian foundation of Yoga theory

According to White's classification, the first period of the history of Yoga begins approximately at 5000 BC. The word Yoga is used in religious hymns (Vedas) referring to war chariots transferring heroes and gods towards the divine light, thus heaven. In the *Kathaka Upanishad* (300 BC) there occurs the introduction of yogic

philosophy, the identification of the individual as part of the universal person and the hierarchical taxonomy of mind-body components, such as mind, intellect, sense, etc. During the period between 300 BC and 400 AD White observes an increased use of the term "Yoga". However, its content varied significantly. Stability of the conceptual framework is observed by the beginning of the 5th century, during which the basic principles of Yoga have been developed and sustained for the following 1600 years (White, 2011, pp.3-5).

In particular, four principles have been developed and respected through the years, irrespective of the kind of Yoga that is being taught or practised. The first principle considers Yoga as analysis of the maladaptive way of thinking, which eventually leads to personal suffering. Suffering can be limited if individuals acknowledge the causes of their problems, employ philosophical analysis and practise meditation. The second principle is related to the contribution of Yoga in raising and expanding consciousness. The term "raising consciousness" refers to the ability of individuals to achieve higher levels of cognition, while the "expansion of consciousness" is related with the idea that one's self becomes an undistinguished component of the universe. The third principle acknowledges the role of Yoga into omniscience. In the case that individuals are able to have access to true cognition, thus to acquire an enhanced consciousness, they have access to extrasensory perception, which is considered as the higher source of knowledge and beyond any doubt. The last principle suggests that Yoga is a technique allowing individuals to enter other bodies and to acquire other supernatural skills. The prevailing ideology is that if individuals have been introduced to the ultimate truth and cognition, they are able to use their cognitive powers to penetrate other bodies and control them. Apart from these supernatural skills, individuals can also acquire or develop other abilities, such as telepathy and clairvoyance. These principles were very influential until the 17th century where new developments started to prevail (White, 2011, pp.6-10).

(B) Mediaeval developments

In this chronological period there are four significant milestones which triggered changes in the practice of Yoga. More specifically, one of them is the way Yoga is approached through *Tantras*, which are medieval texts about the theory and practice of Yoga. According to these texts the goal of Yoga is the self-deification of the

individual and not the release from the pain and tortures experienced by the senses. Self-deification can be achieved through discipline and mediation, and not by rituals. The next important milestone is Hatha Yoga (11th century) where special focus is placed upon breath control and specific guidelines have been developed to facilitate the regulation of breathing. The most important practical aspect of Hatha Yoga is the emphasis given to fixed postures, breathing regulation, locks and seals. Individuals are encouraged to use these techniques to isolate their inner self from the outside. The appearance of Nath Yogis *(*12th-13th century) is the next important phenomenon in the mediaeval history of Yoga. These yogis, or else practitioners, have been practising Hatha Yoga and have used mystic poetry to describe the yogic body. It is worth mentioning that during the 18th century Nath Yogis became yogi warriors, which contradicts the pacific philosophy behind Yoga. Finally, the Yoga Upanishads are another important aspect in the history of mediaeval Yoga. In particular, the Yoga Upanishads are an attempt to interpret classical Upanishads (21 scriptures) from a different perspective. The content of the new text included information about the interaction between the universal macrocosm and bodily microcosm, meditation and the acoustic expression of mantra ("OM") as the presupposition for meditation and yogic techniques (White, 2011, pp.12-19).

(C) Modern Yoga

Modern Yoga is the result of the interaction between Western interest in Hinduism and, equally, Indians familiarised with the Western culture and thereafter seeking opportunities to present the Yoga philosophy and practice to the rest of the world. De Michelis (2008) describes modern Yoga as "..the product of the encounter between modernised forms of Hinduism and Western esotericism..". Some authors suggest that the beginning of modern Yoga should be placed chronologically with the introduction of *Raja Yoga* by Swami Vivekananda at the Chicago Parliament of Religions (1893) (De Michelis 2008, pp.3; Singleton, 2010, pp.5). However, this information is not totally correct since Emerson and Thoreau had presented Yoga philosophy to Western societies long before Vivekananda. The difference between them and Vivekananda is that the former presented Yoga at a theoretical level, while the latter introduced the physical practice of it (Bonura, 2007, p.12). Other important gurus that have taught Yoga in Western societies have been Yogananda, Sivananda and Krishnamacharya.

Krishnamacharya was teaching a style of Yoga which was based on the combination of Hatha Yoga techniques, wrestling techniques of India and British Military calisthenics (White, 2011, p.20). Three of his students, B.K.S. Iyengar, Pattabhi Jois and T.K.V. Desikachar, introduced their own styles of Yoga (Iyengar Yoga, Ashtanga Yoga and ViniYoga respectively) and spread the Yoga tradition both in Europe and the USA, influencing academic and artistic communities (Bonura, 2007, p.12).

B.4 The origin of the Alexander Technique

The Alexander Technique was devised by Frederick Matthias Alexander in his attempt to find a solution for the physiological condition that he was experiencing, which was affecting his career as an actor and elocutionist. Alexander was born in Wynyard, Tasmania, in 1869. He was described as a demanding child, who supported the idea of experiential learning. He believed that knowledge resulting from experience is easily accessible and useful for the individual. During his adolescence, he became interested in classical drama, especially in Shakespeare. As a teenager, he decided to pursue a career in acting and thus moved to Melbourne. He was soon to become famous as a performer of Shakespeare's plays (Wu, 2010, pp.13-14). However, he began to experience persistent voice problems during his recitals, resulting in hoarseness while on stage. He visited medical professionals and voice specialists to find a solution to this recurrent problem. A very conventional medical treatment was given in conjunction with a clear suggestion to rest his voice (Sakalak, 1999, pp.204-205). The above-mentioned solution was only partly effective: he was encouraged by the fact that he could speak easily before the performance began but his voice was in a most distressing condition by the end (Wu, 2010, p.14).

Alexander was convinced that his thinking was responsible for the voice problems that he was experiencing. He decided to devote time to observing himself by using mirrors to become aware of his body movements, posture and balance, as he was speaking or reciting (Bosch & Hinch, 1999, p.245). He soon realised that three habitual patterns were characteristic of his reciting: (i) tightening the neck, (ii) pulling back the head, and (iii) sucking the breath in through the mouth. These maladaptive habitual patterns hindered ease in voice production. Alexander realised that he

needed to inhibit these behavioural reactions and replace them with the use of conscious reasoning (Wu, 2010, p.14). He gave emphasis to the relationship between head, neck and torso in order to achieve a good production and quality of voice. The improvement of the use of his general mechanisms led to a better use of his voice and quality of voice and to additional benefits in his overall health. He was able to recite again without any problem of hoarseness (Bosch & Hinch, 1999, p.245; Wu, 2010, p.15). In 1904, he moved to London and devoted himself to promoting the application of his technique among specific professional groups, such as musicians and actors. He continued developing his technique and teaching others until his death in 1955 (Jain, Janssen & DeCelle, 2004, p.812).

Alexander's initial hypothesis, namely that he was causing his own physical problems, was later proved by means of personal experimentations. These experimentations led to what is considered as his greatest discovery: a new category of conditions. Weed coined the term "propriogenic conditions" to define "conditions in which your difficulty is being caused by what you are doing and how you are doing it" (Weed, 2012, p.16).

The theoretical principles of Alexander's Technique have found scientific validation in the work of Frank Jones and Wilfred Barlow. Jones was the first researcher to use tools such as multiple-image photography, electromyography, x-ray photography, subjective eye level, force-platform measures and subject feedback to compare habitual movements with movements guided by the Alexander Technique, as well as the consequences they had on the human body. Jones argued that it was necessary to reduce stereotyped movements and to perform movements under conscious control (Jones, 1997, pp.107-136). This was an important study which proved that the kinaesthetic effect of lightness (which Jones argued to be the most important and characteristic outcome of the technique) could be "reproduced under controlled conditions, was reported in similar terms by independent observers, and possessed a set of physical dimensions corresponding to subjective reports of the experience" (Jones, 1997, p.137). Barlow investigated the relationship between misuse of the human body and common disorders (e.g. high blood pressure or arthritis). The empirical support provided by these scientific studies has led to the acceptance of the

Alexander Technique not only among performing arts, but also among medical practitioners (Dalumpines 2011, p.1; Santiago, 2004, pp.85-88).

Appendix C

Statistical data resulting from 385 questionnaires

Ten workshops in Somatics for Pianists©

MONTH/YEAR	PARTICIPANTS	VALID QUESTIONNAIRES
1. February 2009	57 participants	28 valid questionnaires
2. November 2009	23 participants	23 valid questionnaires
3. October 2010	41 participants	34 valid questionnaires
4. December 2010	63 participants	61 valid questionnaires
5. February 2011	62 participants	62 valid questionnaires
6. March 2011	47 participants	45 valid questionnaires
7. April 2011	38 participants	22 valid questionnaires
8. April 2011	64 participants	62 valid questionnaires
9. October 2011	36 participants	33 valid questionnaires
10. May 2012	26 participants	15 valid questionnaires

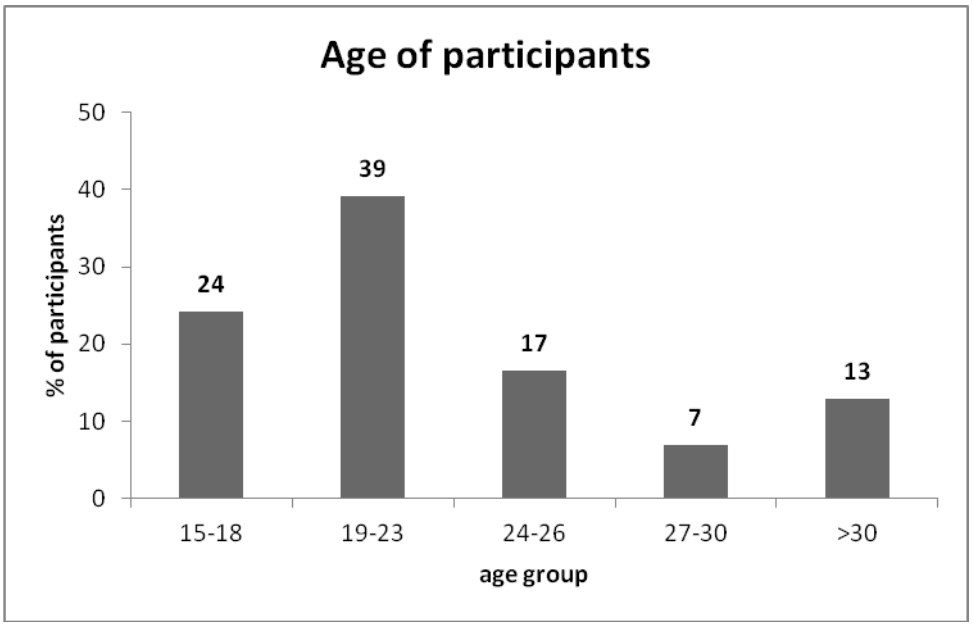

Figure 5.1.1 Age of participants

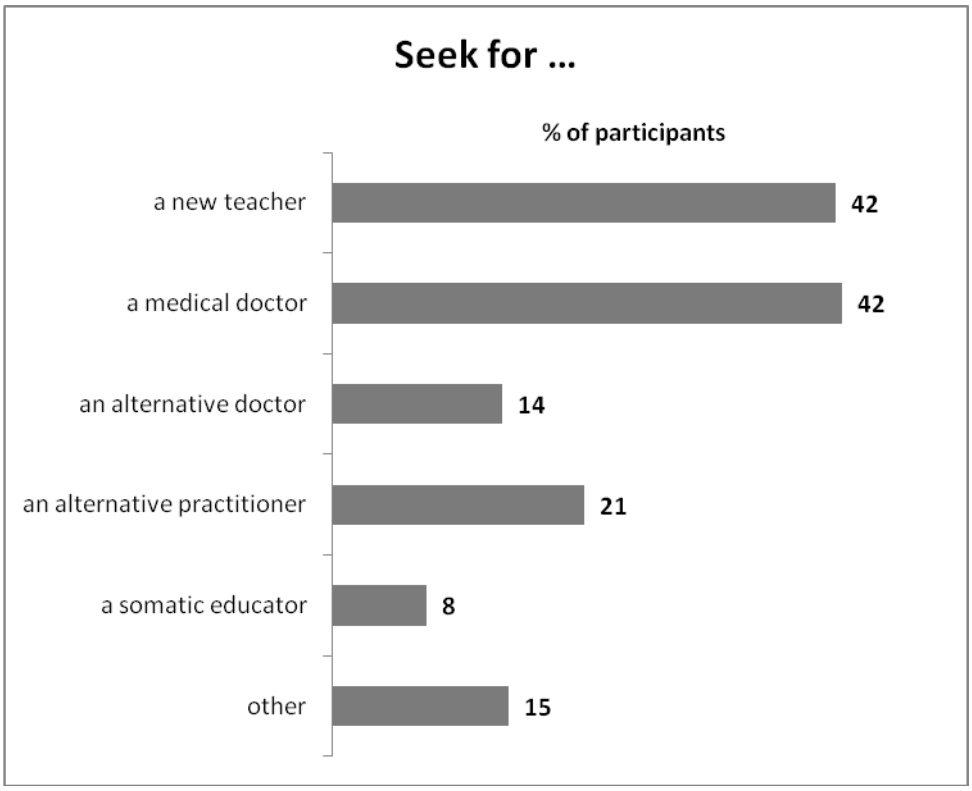

Figure 5.1.5 First choice of consultant after a piano-related problem

Seek for a medical doctor **AND**..	**Chi-square**	**df**	**p-value**
Seek for an new teacher	90.142	1	<0.001*
Seek for an alternative doctor	10.160	1	0.001*
Seek for an alternative practitioner	8.805	1	0.003*
Seek for somatic educator	11.030	1	0.001*
Seek for other	9.568	1	0.002*

Table 5.1.3 Pearson chi square test in first port of call for pianistic issues

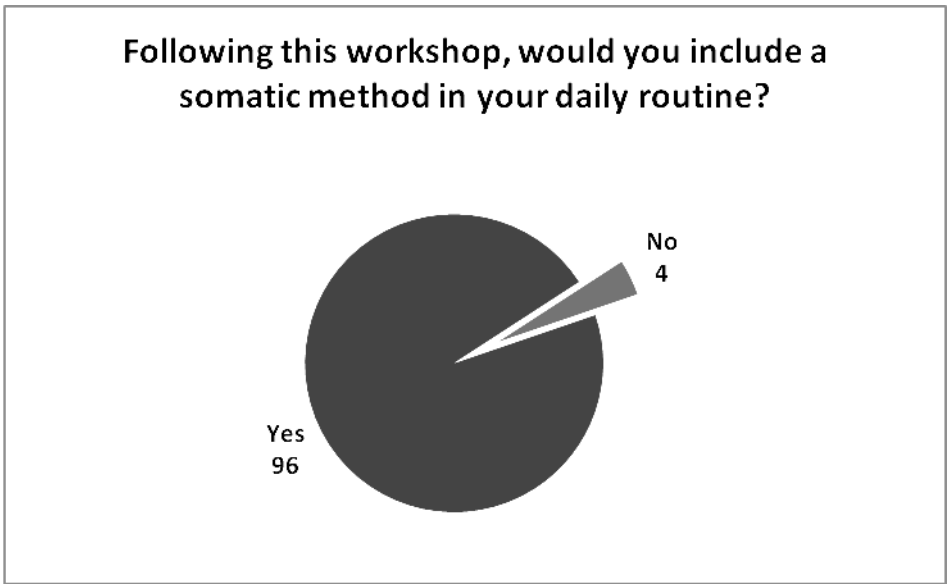

Figure 5.1.9 Participants who would choose to follow a somatic method

	Mean	Standard Deviation
How helpful was this workshop	9.9	.51

Table 5.1.7 Question 11

		Count	Column N %
Would you like to see a next series of this workshop?	No	4	1.1
	Yes	371	98.9
	Total	375	100.0

Table 5.1.8 Question 12

Question 13	Mean	Standard Deviation
Is the way we sense our bodies important in piano playing?	9.9	.33
Question 14	Mean	Standard Deviation
Is muscle power and strengthening important in piano playing?	4.9	2.36
Question 15	Mean	Standard Deviation
Are ergonomics important in piano playing?	9.7	.70
Question 16	Mean	Standard Deviation
Is the way we sit important in piano playing?	9.9	.35
Question 17	Mean	Standard Deviation
Does the way we move our bodies influence the way we move our fingers in piano playing?	9.4	.94

Table 5.1.9 Questions 13 to 17

Question 18	Mean	Standard Deviation
How likely are you to follow a somatic method?	9.6	.91

Table 5.1.10 Question 18

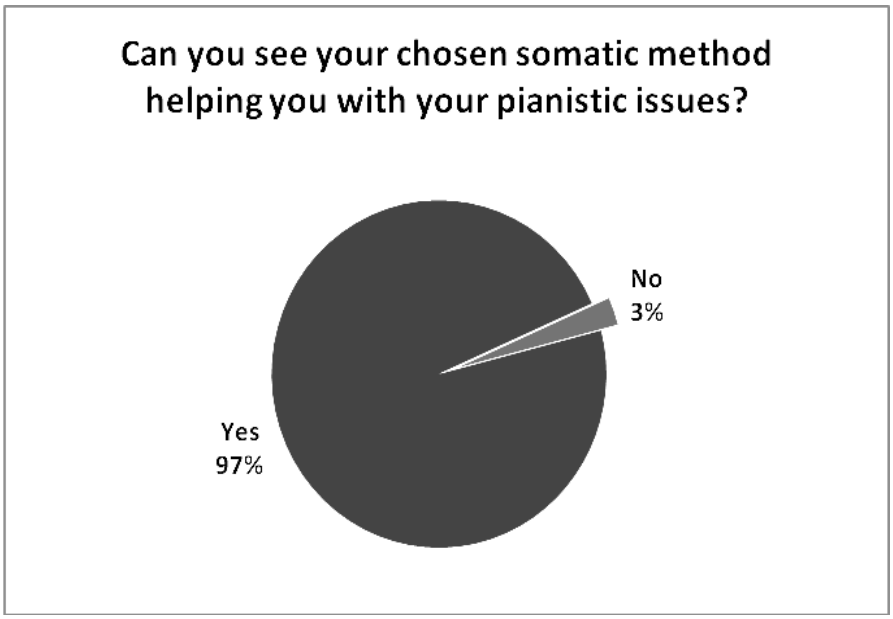

Figure 5.1.14 Evaluation of somatic method in relation to pianistic issues

Somatic education can help with		Already pursuing a somatic method				
		No		Yes		
		Count	Column N %	Count	Column N %	Pearson Chi-square test
aural perception	No	226	91.1	102	77.3	$X^2(1)= 14.003$, p<0.001*
	Yes	22	**8.9**	30	**22.7**	
	Total	248	100.0	132	100.0	
expression	No	214	86.3	81	61.4	$X^2(1)= 30.825$, p<0.001*
	Yes	34	**13.7**	51	**38.6**	
	Total	248	100.0	132	100.0	
performance	No	227	91.5	92	69.7	$X^2(1)= 30.479$, p<0.001*
	Yes	21	**8.5**	40	**30.3**	
	Total	248	100.0	132	100.0	
memory	No	234	94.4	100	75.8	$X^2(1)= 28.003$, p<0.001*
	Yes	14	**5.6**	32	**24.2**	
	Total	248	100.0	132	100.0	
stage fright	No	139	56.0	26	19.7	$X^2(1)= 46.337$, p<0.001*
	Yes	109	**44.0**	106	**80.3**	
	Total	248	100.0	132	100.0	
technique	No	18	7.3	2	1.5	$X^2(1)= 5.698$, p=0.017*
	Yes	230	**92.7**	130	**98.5**	
	Total	248	100.0	132	100.0	

Table 5.1.13 Evaluation of somatic education in relation to musical skills in participants who pursue a somatic method and those who do not

Appendix D

Interviews

Interview 1

PERSONAL DETAILS

Would you mind me mentioning your age group?

15-18 19-22 23-26 27-30 30+

30+

How would you describe your capacity as a musician? (e.g. teacher, soloist, chamber musician, all of the above?)

TEACHER. Performer (if given the opportunity!)

How would you describe your capacity as Alexander Technique expert including the time you have been exposed to the Alexander Technique? (e.g. student, trainee, teacher, trainer?)

Teacher since 2007 (studied with the ITM). Studying for about 15 years. Did my dissertation on musician's injuries and the Alexander Technique. I have also attended workshops for musicians about the AT.

What are your educational qualifications/experience in music?

BMus hons in music from the Royal Welsh College of Music & Drama in Cardiff. Grade 8 distinction.

How many years of teaching experience do you have in teaching the piano?

Began teaching about 16 years ago in Edinburgh part-time. Have continued to teach from home whilst studying or working. Have also worked in a secondary school as a peripatetic teacher for a few years. I have been on maternity leave and will be starting to teach again in January.

What educational setting do you teach in? (conservatoire, university, private, studio?)
I have a room at home to teach in and I also teach in a school.

What is your experience or training in somatic education in general (the Alexander Technique or maybe classes in other methods such as Yoga, the Pilates Method, Feldenkrais, Tai Chi etc)?
For the Alexander Technique see above. I have also done quite a bit of Yoga, some Pilates and Tai Chi. I have done a taster session of Feldenkrais but did not continue.

SOMATIC QUESTIONS

How did you encounter the Alexander Technique (e.g. any particular reasons or by chance)?
Through Tim Kjeldsen at music college. We could choose to have lessons as part of our course. I also attended a workshop with Don there.

Do you feel the Alexander Technique helps you holistically in your well-being?
I had repetitive strain injury at college and I use the Alexander Technique to help to keep this under control as well as using Chiropractic. Studying on the ITM course has helped me become a happier person and has also helped me learn another method of teaching which I use in my piano teaching. I also use my knowledge of the AT to help my piano pupils avoid potential injuries and harmful ways of playing.

In what issues does it help you? (e.g. endurance, strength, coordination, control, concentration, mental health, happiness?)
Mental health, happiness, avoiding injury.

Do you feel that your knowledge in the Alexander Technique helps you as a pianist?
Yes. It helps me play faster and learn quicker without having to practice as much, which is very helpful when you are prone to injuries.

In what pianistic issues does it help you? (e.g. interpretation, endurance, strength, coordination, control, technique?)
Technique e.g. trills, difficult stretches, fast passages.

Does the Alexander Technique help your teaching in piano lessons?
I have answered this already – see above.

If so, how do you feel it helps your teaching?

Do your students pursue a somatic method (e.g. Alexander Technique, the Pilates Method, Yoga etc) in your education setting?
None of my previous pupils have that I am aware of.

If so, which method?
--

How have you experienced the response of your piano students to their Alexander Technique experience?
--
Do you include Alexander Technique related advice in your piano lessons?
Yes. But I skim the edges. Eventually I would like to teach AT to pianists in combination.

How would you envisage the application of the Alexander Technique in a piano curriculum?
Difficult. In my experience so far, I would prefer to teach the AT separately rather than as part of a lesson. You can't really teach them at the same time. But for experienced pianists it works very well as a workshop or series of workshops to help improve their playing. However, I would ideally make it vital for all my pupils to learn the AT if they could all afford it! If only they taught it in school…

At what stage of their piano study do you feel students should be exposed to a somatic method like the Alexander Technique? (e.g. beginning, pre-Conservatoire, Conservatoire, teacher training, later stage, all of the above?)
Before starting would be ideal. Or at the beginning before issues arise.

Interview 2

PERSONAL DETAILS

Would you mind me mentioning your age group?

15-18 19-22 23-26 27-30 30+

(48) and no

How would you describe your capacity as a musician? (e.g. teacher, soloist, chamber musician, all of the above?)

I am a professional piano teacher working at Chetham's School of Music, a specialist music school in England. I also perform as both a soloist and a chamber musician in venues around England. I have taught piano at both University and beginner level. I have worked in major music conservatories, including the Birmingham Conservatoire; the Royal Northern College of Music and the Royal Welsh College of Music.

How would you describe your capacity as Alexander Technique expert including the time you have been exposed to the Alexander Technique? (e.g. student, trainee, teacher, trainer?)

I had several years of individual Alexander lessons, with teachers educated under the STAT course, whilst a student at The Royal Academy of Music, in London; and later in workshops with Estella Cauldwell in Birmingham; and for two years as a teacher trainee under Don Weed and the ITMA.

It was the teachers of the ITMA who most influenced my teaching and helped specifically with my own performing problems.

What are your educational qualifications/experience in music?

GRSM (Hons)< LRAM>ABSM (recit dip)dipRAM>PGCE> certZKPIM(Hung)

My qualifications are for both piano performance, piano teaching, and for music education. I studied at the Royal Academy of Music in London, Exeter University and later on scholarship to the Zoltan Kodaly Pedagogical Institute of Music in Hungary where I studied music education and methodology of the Kodaly concept.

How many years of teaching experience do you have in teaching the piano?
28

What educational setting do you teach in? (conservatoire, university, private, studio?)
Specialist music schools and Conservatoires

What is your experience or training in somatic education in general (the Alexander Technique or maybe classes in other methods such as Yoga, the Pilates Method, Feldenkrais, Tai Chi etc)?
I have followed Tai Chi classes, Yoga and Pilates. These methods have their uses to aid concentration, posture and body strength.
However, in my experience, the only method that I experienced that specifically aids freedom and technique in piano performance is the Alexander Technique.

SOMATIC QUESTIONS

How did you encounter the Alexander Technique (e.g. any particular reasons or by chance)?
Whilst studying at the Royal Academy of Music in London I started to experience pain in my right arm after practising for long hours. This then developed in RSI and one day I woke with a kind of paralysis. I saw a doctor who gave me anti-inflammatory drugs and physiotherapy which had no impact whatsoever on my condition. On the advice of my teachers, I sought an independent Alexander Teacher as AT was not offered at that stage at the RAM.
My own experience of these lessons were that they helped me to relax and released tension, but they had absolutely no impact whatsoever on the problems I encountered whilst playing the piano.
I continued to have pain for several years until I discovered Estella Cauldwell who was giving workshops in Birmingham. Estella was trained under Don Weed and the Interactive Teaching Method. She worked with me whilst at the piano and I quickly made progress.
Several Alexander Teachers, and several years later, I discovered the teachers of the ITMA where I was helped 'whilst in activity' at the piano, to specifically examine use.

Do you feel the Alexander Technique helps you holistically in your well-being?
Not only does AT help me physically but
Alexander Technique can help holistically too. The concept of not doing 'end gaining'(reaching directly for results but thinking through them (means whereby) can have a direct impact on thought processes and can lead to easier less stress full approaches to problem solving that in turn can have an holistic effect on well being and health.

In what issues does it help you? (e.g. endurance, strength, coordination, control, concentration, mental health, happiness?)
Physically, the AT has benefitted me particularly with pain reduction via redirecting my use in specific body parts which has resulted in greater happiness!
In terms of endurance, the Alexander Technique has led to feelings of greater control and stamina and endurance when playing. In other areas it has impacted on my attitude to life situations and aided awareness of limited thinking patterns. This awareness changes the physco physical aspect of the mind/body leading to greater mental control and health/happiness.

Do you feel that your knowledge in the Alexander Technique helps you as a pianist?
The Alexander work I have undertaken has considerably reduced my tension problems at the piano. After suffering for two years with RSI and playing through pain in my right arm, having contracted inappropriate muscles for efficient and proper piano technique) I used the Alexander principle of 'inhibition' to overcome my tendency to grip my extensor muscles.
As a result after a few months of careful analysis of my condition and by redirecting my thought patterns I was able to play without pain and with greater ease and fluency at the piano. The awareness of my thought patterns and their redirection changed my life and impacted not only on my piano performance but on my piano teaching style.

In what pianistic issues does it help you? (e.g. interpretation, endurance, strength, coordination, control, technique?)
Alexander Technique encourages the changing of thinking patterns that lead directly to the prevention of inappropriate over-use of the muscles. As a result tensions are eased and an easier more natural and fluid technique emerges. This in turn leads to a

new sense of stamina and endurance as the body becomes less tired when performing. This has a direct impact on interpretation and, in particular, on sound quality. The sound of a tense performer is an ugly harsh one which is the result of brute physical force impacting with the key.
The sound of a co-ordinated and unforced physical player is one of roundness and fullness as the finger strikes the key and the free arm behind follows through the movement. More importantly when less physical force is used the player experiences a more natural sense of ease and intuitive interpretation can result. There is the feeling that the music has lifted off the page and is more pure in essence

Does the Alexander Technique help your teaching in piano lessons?
Yes, it greatly influences my teaching style and the results that I obtain.

If so, how do you feel it helps your teaching?
I am able to spot tension problems in my pupils, to prevent tension problems and/or eradicate them as they occur. I aid my pupils to make better decision for themselves about how they are "using" themselves and to make more appropriate decisions as to their "use" at the keyboard. Questions are asked about how much tension is appropriate and which muscles are used to move the joints. This has a direct impact on the experience of the pupils whilst performing and invariably leads to a greater sense of ease and fluency and happiness in the pupil.

Do students pursue a somatic method (e.g. Alexander Technique, the Pilates Method, Yoga etc) in your education setting?
All students at Chethams School of Music have access to Alexander Technique classes and most take advantage of them. They are not compulsory but an optional extra - outside of what is taught individually.

If so, which method?
AT

How have you experienced the response of your piano students to their Alexander Technique experience?

When AT is offered to pupil as an option, lessons are taught either individually or in groups. Though pupils say they enjoy the experience of the lessons in helping them to 'relax', students' responses to the classes are not always positive, in that they are given no specific work with their instrument and therefore they cannot associate in their mind how to apply the AT into their daily practising/performing experience.
We have a long list of pupils who are experiencing pain in one place or another as a result of practising without due care. Although the AT lessons are useful and pupils report that they are 'relaxed' during them, they are no more better off when they return to their instruments.
My experience is that the AT is not taught correctly in music schools and that a more appropriate method would be to use that of the ITMA teachers who work directly in activity ie whilst with their instrument.
My own experience of taking AT lessons, as a student at music college, proves this to be true as it had no impact on my actual use at the piano.

Do you include Alexander Technique related advice in your piano lessons?
Yes I always refer to AT when and if appropriate in the course of my lessons depending on the requirements of the pupil and the purpose of the lesson

How would you envisage the application of the Alexander Technique in a piano curriculum?
I would envisage an appropriately trained Alexander Teacher to either come into the actual lessons or to be able to work with pupil, whilst in practise sessions, aiding and supplementing their practise and if necessary to work alongside the actual piano teacher.

At what stage of their piano study do you feel students should be exposed to a somatic method like the Alexander Technique? (e.g. beginning, pre-Conservatoire, Conservatoire, teacher training, later stage, all of the above?)
Alexander principles can be used from the earliest stages of piano playing technique for the prevention of possible mis-use and for the formulation of corrective techniques.
Not all pupils experience the same level of mis-use and therefore it would be more effective if teachers discussed the specific requirement s of the student. The AT could

then be used throughout a student's entire musical education. Hopefully, once the principles are established, it would be needed less. The student would eventually take responsibility for his/her own use.

Interview 3 [translation from Greek into English by the author]

PERSONAL DETAILS

Would you mind me mentioning your age group?

15-18 19-22 23-26 27-30 30+

47

How would you describe your capacity as a musician? (e.g. teacher, soloist, chamber musician, all of the above?)

I've been performing the piano for more than 30 years so I guess that makes me a concert pianist. I have performed extensively with other instrumentalists and pianists so I suppose I am a chamber musician too. I have taught irregularly mainly and only later started teaching in music schools. I have taught at the conservatory for 8 years.

How would you describe your capacity as Pilates expert including the time you have been exposed to Pilates? (e.g. student, trainee, teacher, trainer?)

I've been a student for I guess a bit more than 13 years. As you know, you never stop being a student with Pilates. But I qualified 6 years ago so I guess you could say that I was a student for the first 6 to 7 years. I'm not a trainer.

What are your educational qualifications/experience in music?

Solo piano diploma from the National Conservatory of Music, Bachelor's degree from the London College of Music and a Master's degree from City University London.

How many years of teaching experience do you have in teaching the piano?

22 years both in private teaching and at the conservatory.

What educational setting do you teach piano in? (conservatoire, university, private, studio?)

Conservatory and private music lessons.

What is your experience or training in somatic education in general (Pilates or maybe classes in other methods such as the Alexander Technique, Yoga, Feldenkrais, Tai Chi etc)?
I've had lessons in Pilates for 13 years. Also in yoga, tensegrity and modern dance.

SOMATIC QUESTIONS

How did you encounter the Pilates method (e.g. any particular reasons or by chance)?
I had long term back pain while working at the computer and practicing the piano so my piano teacher told me to go to a class. I was in London at the time so I joined the local Pilates studio. The rest is history. My back pain is gone, and I never get tired practicing or sitting.

Do you feel that the Pilates method helps you holistically in your well-being?
Yes it does. Pilates is a very complete system if you do it as you should. Some people don't do it properly, they think it's a fitness thing. It's not. It's a whole way of living.

In what issues does it help you? (e.g. endurance, strength, coordination, control, concentration, mental health, happiness?)
In all of these really. I can certainly practice longer than I used to be able to. I feel stronger, and I have a better centre. A good, core, that's what it gives you. Then all the rest works like a puppet – you're guided by the core. Yes, coordination is better not only at the piano but in driving too. If you follow through every move then you synchronize it with breathing. It's very organic, so your concentration comes as a free bonus. I'm happy when I practice Pilates, that's for sure.

Do you feel that your knowledge in the Pilates method helps you as a pianist?
Oh, absolutely. You feel much more supported at your centre. If you have a solid centre then all the rest happens easily. Your hands just move around your stable core. Also your breathing helps you with phrasing; you breath out with every big phrase. Not always but when you do it, it works miracles.

If so, in what pianistic issues does it help you? (e.g. interpretation, endurance, strength, coordination, control, technique?)

Well, I would say that I have felt more confident about my body so when I'm on stage I know where I'm going. I feel that I have full control of the situation. I know what I need to do for each movement so this definitely makes me more confident and able to control my movements and my expression.

Does the Pilates method help your teaching in piano lessons?
I tell my students all about the Pilates principles and especially that they should not hurry. You know, 10 times is the magic number and it should be enough for learning a passage.

If so, how do you feel it helps your teaching?
For me, I never get tired! I can sit a whole day at the conservatory and teach but I maintain a strong core and it never gives up on me. Before I did Pilates teaching was agony. I had to move around all the time. Now I never get tired and even if I do, I do a few stretches and core exercises and it helps me focus on the lesson.

Do your students pursue a somatic method (e.g. Alexander Technique, the Pilates Method, Yoga etc) in your education setting?
Well as you know there is no such thing at the conservatory. I've made several proposals to teach classes but they don't seem to understand how important this is. I keep telling them 'look I'm a happy performer I never have pains in my back or fingers, let's give students the chance to know about it' but they think it's not an artistic lesson.

If so, which method?
So I try tell my students to join a Pilates school. There is one close by and two of my female students have joined it – they're in the year of preparing for the solo recital so they are scared of being exhausted from too much practice.

How have you experienced the response of your piano students to their Pilates experience?
Oh, they love it but you need discipline. They think that practicing will be better from going to the Pilates lesson and I keep telling them that coordination that Pilates will teach you is as important as your Bach and Beethoven. But they usually only go

regularly at a time of exams. They think it's a pill. It's not. You need to do Pilates regularly. When they go they're happy of course and you can see it in their posture. They're sitting properly and their hands are in total control.

Do you include Pilates related advice in your piano lessons?
All the time. I explain to them that it's no good repeating a passage a million times if you don't focus. Just do it 10 times, watch your support, have a strong centre, watch your breathing and the passage will work.

How would you envisage the application of the Pilates method in a piano curriculum?
Every student of piano should do Pilates. At least 3 times a week. It is absolutely necessary. Look at the students coming out of class at the conservatory, they're all hunched they all look old and tired. They should be encouraged to do a small Pilates workout every day and between practice hours. They should learn how the core works to support all the other movements and learn how to breath. Breathing is very important for any musician.

At what stage of their piano study do you feel students should be exposed to a somatic method like the Pilates method? (e.g. beginning, pre-Conservatoire, Conservatoire, teacher training, later stage, all of the above?)
I teach them basic mat Pilates from a very early age. Kids love to move so why not teach them how to move correctly? At my studio we always start with a 10 minute mat program to get their core and breathing and support working and end the lesson with a 10 minute program with the longer stretches to lengthen the muscles and feel the back and stomach muscles cooperating.

Interview 4

PERSONAL DETAILS

Would you mind me mentioning your age group?

15-18 19-22 23-26 27-30 30+

30 plus

How would you describe your capacity as a musician? (e.g. teacher, soloist, chamber musician, all of the above?)

teacher, soloist, performer

How would you describe your capacity as Pilates expert including the time you have been exposed to Pilates? (e.g. student, trainee, teacher, trainer?)

teacher for 10 years. Introduced to it during a Ballet class, that had similarities. Started doing it at home, just as a personal exercise. Eventually developed a following in the area.

What are your educational qualifications/experience in music?

Studied music in school (both HS and College) – was ranked in New York State, 22 nd in the State, for the New York School Music Association competitive placements. Have played "recreationally" since, but have taught to both home-schooled and publicly schooled children since 1995.

How many years of teaching experience do you have in teaching the piano?

18 years

What educational setting do you teach piano in? (conservatoire, university, private, studio?)

I teach in my home – at others homes – and in school.

What is your experience or training in somatic education in general (Pilates or maybe classes in other methods such as the Alexander Technique, Yoga, Feldenkrais, Tai Chi etc)?
Pilates, aerobic dance, some ballet and barre work.

SOMATIC QUESTIONS

How did you encounter the Pilates method (e.g. any particular reasons or by chance)?
Discovered it through TV – exercise shows....

Do you feel that the Pilates method helps you holistically in your well-being?
Absolutely. It requires the same meditative concentration disciplines such as Yoga and Tai Chi.

In what issues does it help you? (e.g. endurance, strength, coordination, control, concentration, mental health, happiness?)
It helps with EVERYTHING> physical – mental – spiritual.

Do you feel that your knowledge in the Pilates method helps you as a pianist?
Yes. Definitely.

If so, in what pianistic issues does it help you? (e.g. interpretation, endurance, strength, coordination, control, technique?)
Having to synchronize movement with tempo systematically reinforces the concentration and mathematical precision required in music.

Does the Pilates method help your teaching in piano lessons?
Yes
If so, how do you feel it helps your teaching?
It has helped with systematic and deliberate approaches to time and space. In varying age groups. Especially noticeable in special needs and Autistic children. They identify with the consistencies

Do your students pursue a somatic method (e.g. Alexander Technique, the Pilates Method, Yoga etc) in your education setting?
No....

If so, which method?

How have you experienced the response of your piano students to their Pilates experience?

Do you include Pilates related advice in your piano lessons?
Only I have the experience relative to these questions.

How would you envisage the application of the Pilates method in a piano curriculum?
Progressive curriculum based on body control, breathing, tempo, and expression.

At what stage of their piano study do you feel students should be exposed to a somatic method like the Pilates method? (e.g. beginning, pre-Conservatoire, Conservatoire, teacher training, later stage, all of the above?)
At any stage.

Interview 5

PERSONAL DETAILS

Would you mind me mentioning your age group?

15-18 19-22 23-26 27-30 30+

27 yo

How would you describe your capacity as a musician? (e.g. teacher, soloist, chamber musician, all of the above?)

teacher, soloist, electronic musician, chamber musician

How would you describe your capacity as Yoga expert including the time you have been exposed to Yoga? (e.g. student, trainee, teacher, trainer?)

200 hr certified

What are your educational qualifications/experience in music?

master's in music (piano pedagogy), bachelor's in music (piano performance)

How many years of teaching experience do you have in teaching the piano?

6 years teaching

What educational setting do you teach piano in? (conservatoire, university, private, studio?)

community school, private, university level as a grad student

What is your experience or training in somatic education in general (Yoga or maybe classes in other methods such as the Alexander Technique, the Pilates Method, Feldenkrais, Tai Chi etc)?

Yoga- 200 hour certified, moderate knowledge of Alexander Technique

SOMATIC QUESTIONS

How did you encounter Yoga (e.g. any particular reasons or by chance)?

Grew up with yoga but began practicing seriously to help ease performance anxiety, stress, and other physical problems assocated with performing

Do you feel that Yoga helps you holistically in your well-being?
Absolutely, I am a changed person. I used to be very negative and unhappy and this affected my work. Now I am much happier, perform better, and am achieving success in most of my endeavors.

In what issues does it help you? (e.g. endurance, strength, coordination, control, concentration, mental health, happiness?)
endurance, strength, creative practicing, mental health and happiness

Do you feel that your knowledge in Yoga helps you as a pianist?
Yes. My journey in yoga helped me come to many realizations of how I want to pursue a career in music. It has helped me find the courage and strength to pursue alternative paths to practicing and pursue different performance practices

If so, in what pianistic issues does it help you? (e.g. interpretation, endurance, strength, coordination, control, technique?)
coordination, calm, mental clarity, detachment from fear

Does Yoga help your teaching in piano lessons?
Yes.

If so, how do you feel it helps your teaching?
I have developed a very strong philosophy on technique and application of yoga principles to practicing. Furthermore I am able to quickly adapt for all students based on learning strenghths and weaknesses.

Do your students pursue a somatic method (e.g. Alexander Technique, the Pilates Method, Yoga etc) in your education setting?

I have played with teaching yoga during the lesson but students have not been particularly receptive.

If so, which method?

How have you experienced the response of your piano students to their Yoga experience?

They are indirectly receiving yoga training in piano and yes, they have improved immensely under my teaching.

Do you include Yoga related advice in your piano lessons?

Detachment (vairagya)

How would you envisage the application of Yoga in a piano curriculum?

Strong emphasis on learning the philosophy of yoga and reading yoga texts so that the student may develop a more holistic mental approach to music making.

At what stage of their piano study do you feel students should be exposed to a somatic method like Yoga? (e.g. beginning, pre-Conservatoire, Conservatoire, teacher training, later stage, all of the above?)

pre-consevatoire

Interview 6 [translation from French into English by the author]

PERSONAL DETAILS

Would you mind me mentioning your age group?
15-18 19-22 23-26 27-30 30+
30+

How would you describe your capacity as a musician? (e.g. teacher, soloist, chamber musician, all of the above?)
I am a chamber pianist and perform regularly with my trio (violin, cello, piano). I am also professor of piano and chamber music.

How would you describe your capacity as Yoga expert including the time you have been exposed to Yoga? (e.g. student, trainee, teacher, trainer?)
I am a teacher and trainer of Satyananda Yoga. I've been a student since 1991 and qualified in 1998 after following a 2-year training program.

What are your educational qualifications/experience in music?
DipRCM, ARAM, Diploma Vienna Konservatorium (Chamber Music)

How many years of teaching experience do you have in teaching the piano?
25

What educational setting do you teach piano in? (conservatoire, university, private, studio?)
Conservatoire and music school

What is your experience or training in somatic education in general (Yoga or maybe classes in other methods such as the Alexander Technique, the Pilates Method, Feldenkrais, Tai Chi etc)?
I have attended classes in Iyengar Yoga for twelve years in the UK, in Italy and in Austria. I have also attended classes in the Alexander Technique, Tensegrity and Gyrokinesis.

SOMATIC QUESTIONS

How did you encounter Yoga (e.g. any particular reasons or by chance)?
I have always done yoga ever since I was a student in London. A friend of mine saw me nerve-racked before an exam. She seemed so cool with the whole business of playing in front of a panel. When I asked her how she could do it she said she was doing yoga. That was it. I joined her yoga class and never looked back on pre-concert nerves.

Do you feel that Yoga helps you holistically in your well-being?
Definitely. It has completely changed my ideas about who I am, how I am and why I am.

In what issues does it help you? (e.g. endurance, strength, coordination, control, concentration, mental health, happiness?)
All of the above plus it helps me focus on the reality of the now and all of its potentials.

Do you feel that your knowledge in Yoga helps you as a pianist?
I don't think I could earn a living playing the piano without aiming for yoga.

If so, in what pianistic issues does it help you? (e.g. interpretation, endurance, strength, coordination, control, technique?)
Playing the piano becomes a peaceful routine that takes me back to my own centre. Practicing becomes a moving meditation so I don't even have to deal with stage fright or memorization or any technical issues; they just appear when they appear and they will resolve when they resolve.

Does Yoga help your teaching in piano lessons?
When the student wants to hear what I have to say, yes!

If so, how do you feel it helps your teaching?

With yoga, patience is less of a struggle and students take up this mentality as I communicate it. There is an organic unfolding of the virtues of yoga which is ensued through music. It is almost inevitable once we accept the present state. There is no judgment and no expectation; we simply explore music.

Do your students pursue a somatic method (e.g. Alexander Technique, the Pilates Method, Yoga etc) in your education setting?
The music school doesn't offer any courses. At the conservatoire we get the odd workshop. I encourage them to take up yoga and also organize groups at home where we practice some breathing and meditation exercises.

If so, which method?

How have you experienced the response of your piano students to their Yoga experience?
Those students who are at an advanced level naturally feel the need to engage more into a yoga routine. I can sense it immediately when they have been meditating on a piece. It becomes freer, more expansive. The younger ones have so many things to do at school and after school hours that there is no time to think slowly or relax, so I usually borrow some time of the piano lesson to talk about relaxation, meditation and breathing.

Do you include Yoga related advice in your piano lessons?
Yes.

How would you envisage the application of Yoga in a piano curriculum?
As I said before, I think it's an organic process that should be passed on from a qualified teacher to all the students. Then, if the student decides to take up piano seriously either at the conservatoire or at the university, I would urge them to practice yoga on their own on a daily basis and at least three times a week under the supervision of a qualified teacher.

At what stage of their piano study do you feel students should be exposed to a somatic method like Yoga? (e.g. beginning, pre-Conservatoire, Conservatoire, teacher training, later stage, all of the above?)

Right from the beginning with small steps and gradually learning deeper rudiments of yoga.

APPENDIX E

Somatics for Pianists© Workshop

QUESTIONNAIRE [translation by the author]

Thank you for taking the time to answer some questions regarding Somatics for Pianists©. Please bear in mind that anonymity is maintained and that this questionnaire helps improve provision of knowledge to music students both in Greece and abroad.

If you wish to receive and answer this questionnaire by email, please send a message at somatic.education@gmail.com

GENERAL QUESTIONS

1. Age group:

   15 – 18 19 – 23 24 – 26 27 – 30 31+

2. How many Somatics for Musicians© Workshops have you attended?

QUESTIONS ON PIANO PLAYING

3. Nature of piano playing (please circle as many or as few as you feel appropriate):

   - Student
   - Professional
   - Amateur
   - Teacher
   - Accompanist
   - Soloist

4. Do you have any physical problems arising from piano practice/performance? (please circle as many or as few as you feel appropriate):

   - No problems
   - Technical obstacle
   - Fatigue
   - Discomfort
   - Pain
   - Injury
   - Other

5. As a result of your piano related physical problem, did you seek out for:

    - A new teacher
    - A medical doctor
    - An alternative doctor
    - An alternative practitioner
    - A somatic educator
    - Other

6. Chronologically, was your piano related physical problem close to:

    - Change of technique
    - Change of posture
    - Change of repertoire
    - Preparation for exam
    - Preparation for performance
    - Injury/accident

7. Where in your body do you experience difficulties (technical problems, fatigue or pain) when you practice, perform or teach the piano? (please circle as many as appropriate)

    - Fingers
    - Hands (palms)
    - Forearms
    - Upper arms
    - Shoulders
    - Head
    - Neck
    - Middle back
    - Lower back
    - Legs

QUESTIONS ON SOMATICS

8. Previous knowledge or acquaintance (even non regular) with Somatics :

    - Yoga
    - Pilates
    - Alexander Technique
    - None

9. Following this workshop, would you include a somatic method in your daily routine?

    YES NO

9.1 If YES, which **one** method would you choose?

- Yoga
- Pilates
- Alexander Technique

10. Are you already pursuing a somatic method?

    YES NO

10.1 If YES, which one?

- Yoga
- Pilates
- Alexander Technique
- Other

10.2 Do you deal with issues arising from piano practice and performance during your chosen somatic method session?

YES NO

10.3 On a scale from 1 to 10 where 1 is NO HELP AT ALL and 10 is FULL RESOLUTION OF ISSUE, in which of the following aspects has your chosen somatic method helped you and how much? (please grade as many or as few options as needed):

(NO HELP AT ALL) 1 2 3 4 5 6 7 8 9 **10 (FULL RESOLUTION OF ISSUE)**

General health	**1** 2 3 4 5 6 7 8 9 **10**
Musculoskeletal problems	**1** 2 3 4 5 6 7 8 9 **10**
Posture at the piano	**1** 2 3 4 5 6 7 8 9 **10**
General stamina	**1** 2 3 4 5 6 7 8 9 **10**
Pianistic stamina	**1** 2 3 4 5 6 7 8 9 **10**
General strength	**1** 2 3 4 5 6 7 8 9 **10**
Pianistic strength	**1** 2 3 4 5 6 7 8 9 **10**
General neuromuscular co-ordination	**1** 2 3 4 5 6 7 8 9 **10**
Pianistic neuromuscular co-ordination	**1** 2 3 4 5 6 7 8 9 **10**
Specific aspects of piano technique	**1** 2 3 4 5 6 7 8 9 **10**

QUESTIONS ON WORKSHOP

11. On a scale from 1 to 10 how helpful was this workshop?

Not helpful at all 1 2 3 4 5 6 7 8 9 10 Very helpful

12. Would you like to see a next series of this workshop?

YES NO

13. Is the way we sense our bodies important in piano playing?

Not at all 1 2 3 4 5 6 7 8 9 10 Very much

14. Is muscle power and strengthening important in piano playing?

Not at all 1 2 3 4 5 6 7 8 9 10 Very much

15. Are ergonomics important in piano playing?

Not at all 1 2 3 4 5 6 7 8 9 10 Very much

16. Is the way we sit important in piano playing?

Not at all 1 2 3 4 5 6 7 8 9 10 Very much

17. Does the way we move our bodies influence the way we move our fingers in piano playing?

Not at all 1 2 3 4 5 6 7 8 9 10 Very much

18. How likely are you to follow a somatic method?

Not likely at all 1 2 3 4 5 6 7 8 9 10 Very likely

19. Following this workshop, can you see your chosen somatic method helping you with your pianistic issues?

YES NO

EVALUATION OF SOMATIC EDUCATION

20. How much is somatic education linked to piano technique?

Not at all 1 2 3 4 5 6 7 8 9 10 Very much

21. Following your attendance in this workshop do you feel that somatic education should be part of:

- Private piano lessons to children
- Private piano lessons to all ages
- Conservatoire piano lessons
- University piano lessons
- Piano Teacher Training

22. Following your attendance in this workshop do you feel that somatic education can enhance (circle as many or as few as you feel needed):

- Piano practice
- Piano teaching
- Piano interpretation

23. Following your attendance in this workshop do you feel that somatic education can help with (circle as many or as few as you feel needed):

- Aural perception
- Expression
- Performance
- Memorisation
- Stage fright
- Technique

Appenix F

Contract agreements

The following text preceded the email interview questions and was sent to every one of the interviewees.

Email interview questions on the Pilates Method, Yoga, the Alexander Technique and piano performance

Contract agreements

Before you start I would like to assure you that your name will not be mentioned in the thesis. The analysis of the data as well as my transcription of these interviews will be included in the thesis and available to academic readers and anyone who has access to academic texts.

My research project

My research project is on somatic education and piano performance. Somatic education covers all mind-body methods that deal with people holistically and from a first-person perspective. In my thesis I examine the possible effects that the Pilates Method, Yoga and the Alexander Technique may have on piano performance (whether in practice, teaching or interpretation).

I have occasionally offered indicative answers in brackets. I normally don't expose my interviewees to those unless they need further clarification on the content of the question. The reason I do that is to avoid prejudice in my interviewees to any direction or unintentionally imposing my opinions on them. Therefore, please add anything that you might judge expresses your feeling more accurately, which might not be included in brackets. Please answer in any way you wish whether in a detailed descriptive manner or as simply as you like.

Thank you very much for agreeing to be interviewed I am both honoured and grateful.

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